STATE OF CALIFORNIA - THE RESOURCES AGENCY
BEFORE THE
CALIFORNIA ENERGY COMMISSION (CEC)

In the matter of,	)
	) Docket No. 12-EBP-1
Comprehensive Energy Efficiency	)
Program for Existing Buildings	)
(AB 758 Program	)

Staff Workshop on

Comprehensive Energy Efficiency Program
For Existing Buildings (AB 758)
Scoping Report

California Energy Commission
Hearing Room A
1516 9th Street
Sacramento, California

Monday, October 8, 2012
9:00 A.M.

Reported by:
Kent Odell

COMMISSIONERS

Andrew McAllister, Lead Commissioner, Energy Commission

Mark Ferron, California Public Utilities Commission (WebEx)

ADVISORS

David Hungerford, Advisor to Commissioner McAllister

Grant Mack, Advisor to Commissioner Weisenmiller

PRESENTERS

Dave Ashuckian, Deputy Director, Energy Commission

Bill Pennington, Energy Commission

Simon Baker, California Public Utilities Commission

Christine Collopy, Energy Commission

Devi Eden, Energy Commission

PANEL 1

Devon Hartman, California Building Performance Contractors Association

Tiger Adolf, Building Performance Institute

Kate Meis, Local Government Commission

Siobhan Foley, California Center for Sustainable Energy

Joseph Oldham, City of Fresno

Jeff Gleeson, Pacific Gas & Electric

PANEL 2

Conrad Asper, California Building Performance Contractors Association

Jonathan Budner, Southern California Edison

Jack Clark, California Center for Sustainable Energy

Russell Bayba, Build It Green

Eric Beriault, The Energuy

Spencer Rosen, Energy Integrity (WebEx)

Rick Wylie, Beutler Corp.

PANEL 3

Ted Bardacke, Global Green

Nathan Bruner, San Diego Gas & Electric

Karim Bouris, MAAC Project

Heather Larson, StopWaste.org

Matt Schwartz, California Housing Partnership Corportation

Alicia Gaylord, BRIDGE Housing

Sophia Hartkopf, Heschong Mahone Group, Inc.

PUBLIC COMMENT

Gina Goodhill Rosen, Global Green USA

Erin Niemela, Efficiency Council

Jeffrey Byron, Former Commissioner, National Board of Clean Tech Open

Bruce Ray (WebEx)

Matt Golden

Mark Berman

Mike Keesee

Jennifer Svec

David Cohen

Steve Schmidt

Barbara Nernesman

PUBLIC COMMENT

Kathy Vogel

George Nesbitt

Mike Gabel

Mike Bachand

Chris Cone

INDEX

INDEX

INDEX

P R O C E E D I N G S

OCTOBER 8, 2012 9:04 A.M.

MR. ASHUCKIAN: Good morning. I want to thank everyone for coming today to our AB 758 workshop. We have two very comprehensive-filled days, so I want to thank everybody for getting here bright and early.

And at this point we expect the day to pretty much go all day long, so I want to get right into it.

My name is Dave Ashuckian, I'm the Deputy Director for the Division of Energy Efficiency and Renewable Energy here, at the Energy Commission.

And we have our team with us. You'll get to meet them throughout the day so I won't -- we won't do that right now.

Well, I'll start with a little introduction, talk about where we are to date, a little bit about the program and mostly get into today's workshop, what the subjects will be, how we'll actually manage the process, and a little bit of housekeeping issues.

So, let's talk about AB 758. We've been doing -- the Energy Commission has been doing some work over the last few years with the American ARRA funding, primarily looking at financing programs, some whole house programs targeted residential and nonresidential programs.

And so we have kind of gotten some kick-starting with the Federal Stimulus Funds.

We've divided the program into three phases. The first phase is basically where we are now, developing the program and the action plan, which we expect to be kind of the result of these workshops and some next-step workshops.

The second phase will be actual market development and partnerships. This is where we'll be developing the programs, getting all the infrastructure in place.

And then the last phase will be wide-spread deployment upgrade requirements and, potentially, regulations as things move along.

Right now, as I mentioned, phase one is the scoping report, which was published prior to this workshop and will be a major point of discussion in this workshop.

From here we'll do the action plan. This will basically be our roadmap of where the program will be headed, and we expect that to be developed with the comments received from this workshop, as well as subsequent workshops on the draft action plan.

Right now the plan is to have that action plan go to the Commission sometime in probably December, with adoption in early spring.

One of the major activities of the action plan will be to help inform the investor-owned utilities' next energy efficiency portfolios, primarily for the 2015 through 2017 time frame.

We're hoping that based on some of the activities that are happening throughout the State that there may be additional funds that come into the program, as some of the initiatives and bills get further developed.

So, we're looking for, you know, a pretty comprehensive program. Here at the Energy Commission we're going to be devoting a significant amount of staff to this program for the foreseeable future, so it's going to be a pretty major activity for us.

Let's just talk about today's situation here, this workshop. We have written comments that we'd like to have by -- in basically two weeks, by October 23rd.

And as I mentioned before, the draft action plan by the end of the year. We will have the action -- we'll have at least two action plan workshops on the draft action plan, one probably in Northern California and one either in Central or Southern California.

And again, we plan to have the plan adopted in early March, early spring, late winter.

And one of the things about AB 758 is that it takes major coordination and planning. We're working very cooperatively with the Public Utilities Commission and we're hoping to work cooperatively with the public utilities, as well.

A little bit about today's workshop. Today and tomorrow, basically, we're going to start off today with a summary. Bill Pennington, the Assistant Deputy of the Division will be giving an overview of the scoping report.

And then we'll be jumping right into panels. We'll have three panels each day. Today we'll focus on residential panels, we'll talk about rating systems, we'll talk about upgrades. And we'll have questions and comments.

We'll start the day -- we'll start at the end of each panel by questions from the Commissioners, followed by comments and questions from the public.

We are doing what we're calling question mapping for the panelists. We have -- we have just about 40 questions on the agenda that we'd like answered from both the panelists, as well as you participants and stakeholders.

That is way too many questions for each panelist to address, so what we've done is what we're calling question mapping. We have taken questions that we think the expertise of a specific panelist has, and asking them those specific questions, so that each panelist does not have to answer every question as part of their panel.

Certainly, we welcome comments and so anybody can comment and have answers, but we don't want to have, you know, basically the day dialed up where every person has to answer every question.

There's also some additional questions at the end of the agenda. We felt that those particular questions didn't fit specifically into any one panel, but we would like comments on those as well, both either today or written.

And so those are available for anybody to address as well.

Tomorrow we'll be focused on market -- there will be an opening presentation tomorrow on data needs and kind of the market characterization and looking program targets, and program goals.

The panels will focus on data collection and nonresidential -- basically, it's the nonresidential sector, and, again, followed by questions and comments.

We're asking the panelists to be brief. We basically asked them to have about a seven-minute maximum opening presentation. We're asking all comments to be three minutes or less by the participants. And we're asking the panelists to respond to those questions within three minutes or less.

We're going to use a blue card system today. There will be blue cards in the back and then blue cards up here. Justin will have blue cards. And the blue cards, all we need is your name and -- the blue cards look like this. Basically, we just need your name. You don't need to fill in the top part that says date and all that.

But we'd like to have what panel you have questions about. If you have questions you know you're going to have right now, feel free to go ahead and fill out the card now.

We'll have the panel number. If you have a specific topic you'd like to address, if you could actually add the actual question that would help us in determining how much duplication there might be.

We will actually allow you to read the question, your question directly, but by getting these blue cards, they'll be coming to me, and we'll be assessing how much questions we have and try to maybe organize them and minimize some duplication.

So, you'll be asking the questions, but we'd like you to submit a blue card before you ask that question so we can coordinate that process.

For folks on WebEx, the same situation, if you would ask your question and then our WebEx coordinators will actually fill out a blue card for you and then we'll coordinate that as part of the program.

A little bit of housekeeping, restrooms are right across the hall. There's a snack bar upstairs on the second floor. And the emergency exits are on the, as I say, both sides of the wall you came in, and also on the left here as you leave the room.

If there is a fire drill, we are asked to all congregate at the park, which is kiddie-corner across the street. I shouldn't say a fire drill. I should say a fire, or a fire drill, actually, so either way.

One thing to note, if you do leave those doors, you actually have to have a key card to leave the doors to the left, so don't exit without -- you have to use the front door or the main door to exit. If not, the actual alarm goes off.

And once you do exit those doors, if you happen to walk out with somebody else, you cannot come back in those doors, you have to enter the front door.

So, with that I'll let Commissioner McAllister, our Lead Commissioner for Energy Efficiency, say a few words.

COMMISSIONER MC ALLISTER: Thanks David. I'll try to be brief here, as I will through most of the door. I know some of you who know me know that that's a challenge for me, but I'm going to do my best.

And I really wanted to thank you all for coming. I know it's a lot to ask for you to be in here one day, if not two days, and take it out of your busy schedules. And you're all here for a reason, because you're interested in this topic and you already know a lot about this topic.

And you have many, many things you could be doing so I really, personally, very much appreciate your all being in the room, and those of you on the web, as well.

On the dais with me here today are David Hungerford, who's my adviser, to my right. And to his right Grant Mack, who is advisor to Chair Weisenmiller, who is the Associate Member on the Committee that is on all things energy efficiency, including AB 758.

So, I very much appreciate his participation as well. He's actually on vacation, so I'm glad he's actually not here because he's having fun and getting refreshed.

Let's see, I want to acknowledge staff first and foremost. They have -- Christine Collopy and her team, under David -- Dave Ashuckian's leadership and with Bill Pennington's advice, I think you've really done a bang-up job getting things moving on AB 758, particularly pulling together these workshops and getting the ball rolling forward.

So, I acknowledge that and I really, really appreciate all of that. I look forward to working with the team, I'm really glad they're on the case.

And also, in particular, I wanted to acknowledge our sister agency, the California Public Utilities Commission, especially Commissioner Ferron who's the lead on energy efficiency over there.

And the energy efficiency staff, led by Simon Baker who's here today, and all of his great staff. They know so much about this topic and we're really looking forward to continuing the collaboration. It's very positive and I think it's an opportunity, really, for us to have even -- even better coordination and even more really productive dialogue between the two agencies.

So, I want to thank them for all their efforts here, too, on the scoping plan and moving forward.

And then, finally, although she was not able to be here, I want to acknowledge Assembly Member Nancy

Skinner, who was the author of the bill, and managed to get it passed, and it was really a gargantuan effort.

And the legislation really does reflect her bold vision and commitment to energy efficiency and sustainability. And not the only thing she's done in this area but maybe, arguably, perhaps even the biggest thing she's done in this area. So, thank you to her on that.

We're obviously in very good coordination and communication with her office on the bill.

Also wanted to acknowledge Global Green who is here today, Mary and Gina who did a lot of yeoman's work getting it past, as well.

So, a lot of team building going on here and it will continue in going forward.

So, what we are doing here is vitally important to our State. It's hard to over-state, really. Proper implementation of this bill could have a major positive impact on our State's environmental and economic health for generations. It's just a fact. If we do it right, it's going to be a big, big deal.

It gives the Commission broad authority to direct activity and funding to support the upgrade marketplace, which is greatly needed.

And I, and the other Commissioners, are really committed to a process that enables broad participation and really figuring out what works. I, personally, am committed to that.

Our organizing principles, really my organizing principles are really -- I'll just sort of name them quickly. I want to just give some context for where I would like to take this and broadly how I'm trying to approach this.

We want to encourage approaches that will most effectively support the marketplace, okay. What will best enable a contractor and his or her potential customer to come to agreement and do an upgrade project on an existing building?

Okay, they are the folks that are going to be out there installing, doing upgrades. You know, nobody at either Commission is going to be out there with white trucks doing installations, right. We need to help the marketplace succeed.

We want to encourage an element of new approaches and that's project pathways; that's business models through the leveraging of available data and expertise.

Innovation's not going to come from us, like I said it's going to come from the entrepreneurial spirit of Californians and the folks that are in this marketplace trying to make it work.

So, we need to figure out how to support them. Okay, you know, we put the lines on the field, but we're not the players. And no replacement ref jokes, please.

We want to ensure in the most efficient and transparent manner possible contractor accountability and consumer protection. So, we can't just let the marketplace go forward and do what it's going to do without any monitoring at all. We need accountability and we need quality, so we're committed to that.

And, finally, we want to focus on long-term development of this marketplace, not just for the mainstream market, but also for low- and moderate-income. We can't leave those folks behind and it's a different problem, it's a complementary problem and we have to think about it all globally and together.

So, that's kind of my hope for these two workshops, for the action plan going forward, for the comments that we're very much looking forward to receiving after today's and tomorrow's workshops.

We really want to encourage you all to put your best thinking caps on and get that in your comments and put it on the record. The record is our life blood; we make decisions based on it.

And so everything today is going on the record, tomorrow and in the comments, and we really want the broadest participation possible.

So, I'll be drilling into these issues during the panels and subsequently, as sort of strategically as I can and look forward and invite members of the public who have specific questions to try to get in the queue, as well, to ask your questions.

Also, the CEC's Public Adviser, I'm not sure if she's in the room, Jennifer -- Jenny Jenkins. But if she's not, you can contact the Public Adviser. For those of you on the web, in particular, anybody unfamiliar with the process, the Public Adviser can help you participate and get your comments on the record.

So, one additional housekeeping, if you're trying to get on the web, I know you wouldn't do that to do anything but really be present here today.

But if you want to get on the web, the password is "Meg@watt1", but the "a" is an "@" symbol, so, Meg@watt1, so it's capital M.

Again, thank you all for coming. I'll wrap up my comments there.

And without further ado, I think it's Commissioner Ferron next on our agenda. So, Commissioner Ferron for the PUC is kind enough to talk to us over the web connection, so Commissioner Ferron.

MR. ASHUCKIAN: I just want to add one more comment before we go to Commissioner Ferron and that is we are setting up Hearing Room B as an alternate location. Obviously, we've just about run out of chairs in this room.

So, if folks know of others coming, or if you happen to lose your place, you might want to make sure that -- we're playing musical chairs here today.

Hearing Room B which is, again, right straight across the hall, will also have the feed.

So, Commissioner Ferron are you on the line?

CPUC COMMISSIONER FERRON: Yes, I'm here. Can you hear me, everyone?

MR. ASHUCKIAN: Yes.

CPUC COMMISSIONER FERRON: Great. Okay. Well, thank you very much, Andrew, for introductory remarks. As said, I'm Mark Ferron and I'm the assigned Commissioner for Energy Efficiency at the Public Utilities Commission.

I'm very sorry I'm not able to join you all in person today, but I am grateful to Commissioner McAllister for giving me the chance to say a few words at the start of the workshop.

So, I'd like to take three or four minutes to set the context for today's meeting from the stand point of the Public Utilities Commission.

As most you know, the CPUC is currently deliberating on the investor-owned utilities' energy efficiency portfolios for 2013-14. We're working to have these portfolios ready for the Commission to vote on, hopefully ready in the next couple of days, although the vote will be in a little while, which is one of the reasons why I'm not able to be there today.

But by way of background, we are giving guidance to the utilities on their energy efficiency programs and we wanted to create a transition portfolio which speaks to, one, retain the elements of the existing programs that are working well; two, eliminate the elements that do not work as well and, crucially, lay the groundwork for broader changes starting in 2015.

A major goal for us is to transition away from energy efficiency measures that have a relatively short lifespan and move towards more comprehensive measures that give us deeper, longer-lasting savings, like the whole building retrofit, the subject of this workshop.

As we all know, existing buildings represents the biggest source of untapped savings, but they are more expensive to get at and will require diverse strategies to mine the savings.

Can you all still hear me?

MR. ASHUCKIAN: Yes.

CPUC COMMISSIONER FERRON: Okay, great. I'm just getting a bit of feedback.

Just to continue, we're placing a greater emphasis on local governments and third-party contracts in this decision.

We're giving greater powers to what we're calling regional energy networks, which are expansions of local governments.

And I anticipate we're going to see a deeper partnership between local governments and the utilities moving forward.

At the same time I believe that by placing a greater emphasis on third-party providers this will help encourage innovation and more cost-effective delivery channels.

We've given guidance to the utilities to develop the portfolio financing options, targeting both residential and nonresidential customers.

And although we're still finalizing the decision, it's likely that the approved portfolios will comprise roughly $200 million per year in financing, including the fully funding of ongoing finance and the continuation of the ARRA pilot programs, and the development of new pilot approaches on the basis of the work that we're doing with our consultants, Harcourt, Carey & Brown, after we hold further workshops later this month.

As Commissioner McAllister mentioned, I can assure you that we at the CPUC are absolutely committed to collaborating with the California Energy Commission on AB 785, both in program design and implementation to ensure that we're minimizing the duplication of effort and ensure that we have the wisest use of ratepayer resources.

As you know, in the current 2010-12 investor portfolio, the CPUC is committed to spend approximately $2 billion directed at the existing building sector.

But it's clear that continuation and expansion of our residential efforts under the title "Energy Upgrade California" will be significant.

We're trying to make this not only a programmatic effort, but also create a brand that communicates to customers a whole suite of different energy-related programs, while still encouraging a single touch point.

Still, I believe that further actions needed to refine the program to make it more cost effective, more attractive to more consumers, and more flexible, yet at the same time more systematized to facilitate scaling up.

And all the while we need to maintain our quality assurance and the integrity of the savings.

Accordingly, over the next couple of days at this workshop, as we dig into these issues, I strongly encourage that we all try to keep the end-use customer in mind and, in particular, the complex relationship between the customer and the suppliers.

As Commissioner McAllister pointed out, the contractors and the energy service professionals are the ones on the ground selling products and delivering energy efficiency every day to the consumers. So, we need to recognize that and we need to take input from contractors in adapting our program strategies accordingly.

Specifically, we must ensure that our regulatory and administrative functions are transparent to suppliers and invisible to customers.

And so with that, again, I offer my regrets for not being able to attend in person, but I am looking forward to working with all of you on the next steps. Thanks very much.

COMMISSIONER MC ALLISTER: Thank you very much, Commissioner Ferron, I appreciate that.

Okay, Bill.

MR. PENNINGTON: Good morning. My name is Bill Pennington, I'm the Deputy Division Chief for Energy Efficiency and Renewable Energy at the Energy Commission.

And to my right is Simon Baker, who is the Branch Manager for Energy Efficiency Programs at the PUC Energy Division.

I'm going to be going through, today, a short discussion of kind of the high points of the scoping plan, the scoping report, looking at primarily the executive summary and the background sections of the scoping report.

Before I get started, I want to recognize the really strong contribution of Becky Menton in putting this scoping report together. Becky has recently left the Energy Commission to take a job at the Marin Energy Authority. But while she was here, she did -- she was the project manager for developing the scoping report and was a primary author, and also did a lot of editing on the report.

So, it was a great job and kudos to her. We miss her.

Let's see, let's get going here. Sorry. Oops.

MR. ASHUCKIAN: If you like, Bill, I can advance the slides for you.

MR. PENNINGTON: You want to do that for me? Sure, that will help me. Thank you.

MR. ASHUCKIAN: Is that where you want to be?

MR. PENNINGTON: I want to be, yeah, right there.

MR. ASHUCKIAN: Okay.

MR. PENNINGTON: Thank you.

Where's the escape here? You want to get the escape there? Thank you.

So, California has long been a leader in energy efficiency programs. The combination of California's Building Appliance Standards and the long history of utility programs has helped California's per capita electricity use stay constant for a very long period, while the nation has doubled since 1975.

California's standards have saved an estimated $65 billion in customer electricity bills. And, you know, it's a major foundation.

However, there are energy efficiency savings that have been left on the table here as a result of these programs that are further available to pursue, particularly in existing buildings.

The Building Standards impact energy efficiency improvements in newly constructed buildings, but also in additions and alterations to existing buildings.

And the Appliance Standards impact appliances and equipment that is sold not only in new buildings, but in existing buildings.

So, those are important contributions but we need to do more.

Utility programs focus on single measure rebates, or have in the past focused primarily on single measure rebates.

And as Commissioner Ferron was saying, there's an opportunity for moving forward into more whole building savings opportunities.

So, the Legislature actually has been interested in this issue of additional savings being available, particularly in the existing buildings, for a very long time, and that was really their origin of developing the AB 758 legislation.

The next slide, please. So, under AB 758 the Legislature directed the development of a comprehensive multi-faceted program that would address energy efficiency in existing buildings statewide.

The legislation establishes many program components that are named in the legislation and are directed to be integrated as a whole to pursue the savings beyond what standards and utility programs have thus far saved.

Basically, the -- this program is a market transformation program. With all of the elements that are identified, the expectation is to change the market and make lasting, sustainable changes.

This definition, here at the bottom of the slide, that's partially covered, is the PUC's definition where market transformation would pursue long-lasting sustainable changes in the structure or functioning of a market by reducing its barriers over time.

And that is really what AB 758 is trying to accomplish.

The next slide, please. The next slide. Can you back up? This thing doesn't back up very well.

Okay, the scoping report concludes that effective program design will result when the relationship of the program's benefits to the cost is compelling to motivate a property owner to action.

The value proposition here is a comparison of the energy -- of the benefits, the energy benefits, but also the non-energy benefits, such as improved comfort and more healthy living environments, to the costs.

And, basically, the action is expected to occur when the cost -- when the benefits are worth the cost. And those costs include not only the cost of the measures, installing them and so forth, but also the transaction cost in delivering the improvements.

The program must also focus on customer confidence by ensuring installation quality and contractor accountability, and for providing program evaluation and improvement.

The next slide. The Energy Commission, and the PUC, and the POUs were called out in AB 758 for specific actions. The Energy Commission is the key developer and implementer of the program and is responsible for all of the Bill's many facets, including actively coordinating with stakeholders.

The PUC is expressly directly to investigate the potential for IOUs providing energy efficiency financing options for the purpose of supporting the AB 758 program. And it is also directed, in its three-year report to the Legislature, to report on each IOU's activities that relate to AB 758.

In terms of the POUs, the mandate is for the POUs, in their decision making and program development, to recognize the intent of the legislature to encourage energy efficiency in existing buildings. And to identify, in its reports to the Energy Commission, activities that it's pursuing related to that.

The next slide. The scoping report concludes that, as has been said by both Commissioners this morning that contractors play a pivotal role in getting the energy efficiency upgrades to happen. The contractors are typically the agents that must make the case to the building owners to get action to be made.

There also are many other actors, as named here, who have a role to play in our work under this program.

For the program to be successful in the long term, it's highly important for successful partnerships to be developed. And the legislation called that out in coordination, expectations, and public communication, and also in our plan that Dave Ashuckian presented earlier, our phase two activity, in particular, is to extend the partnerships that were developed under phase one as we move forward in this program.

The next slide. So, I'm going to go through a series of slides here that talk about the different program components that are identified in the legislation.

First, in terms of investing energy efficiency, the scoping report concludes that financing is very important to achieve the deeper investments that we're trying to accomplish in energy efficiency upgrades.

Financial products are needed to increase access to capital by providing lower interest rates and increasing the length of financing terms to match the expected life of the upgrades.

A key factor in achieving scale is to enable loans to be sold into secondary capital markets. To enable that, data is needed to be collected and shared to demonstrate that energy efficiency loans perform well in terms of repayment without excessive default.

And another key factor here is that in mainstreaming of energy efficiency loans it will be important to achieve a consideration of energy upgrades in the property valuation process.

The next slide. The scoping report also concludes the workforce development is a very important part of the program, again named in the legislation. Well-qualified workers and experienced workers are essential to providing quality installations.

Customer confidence is dependent on this quality and in the lasting savings that would come from upgrades.

Workforce efforts need to match the marketplace needs for scale, content, location, accessibility and cost, and must be aligned with local and regional markets.

To make sure that training is focused on bridging skill gaps, it’s important for the contracting industry and other key market actors to participate in the assessment of workforce needs.

Apprenticeship is also a possible strong tool that can help in this program, particularly in the nonresidential sector.

The next slide, please. The scoping report concludes that energy assessments consistent with BPI standards are critical to successful home performance projects, creating the project scope, conducting test-in diagnostics, and combustion safety testing, and setting up the test out diagnostics.

Energy assessments are a major opportunity for educating the customer, making the case for the customer to take action.

Conducting HERS ratings also can be important in the marketplace. Widespread availability of HERS ratings could create the potential for energy efficiency to be consistently considered in property valuation.

However, ratings may or may not be useful to customers considering an upgrade project. If the customer is basically thinking about how are they going to invest their own money in an upgrade that, you know, where they're in a situation where they're not leaving the house for a considerable period, not planning to sell the house, the rating may not be particularly useful.

And so in planning for how ratings would be used in the future, that's a consideration that the Commission needs to make.

Also, energy assessment software must be able to make recommendations to customers who are making those investments of their own money. That software needs to be calibrated to actual energy use, and that's an improvement that needs to be made beyond what was happening in the ARRA program.

Related to nonresidential assessments and ratings, the scoping report finds that this is quite a different ballgame than for residential. Doing energy assessments in nonresidential buildings can be a much more time consuming and labor-intensive process than residential assessments.

The industry standard ASHRAE's Energy Audit Protocols provide for a progressive approach where level three audits are only suitable, perhaps, to large buildings with complex systems, where opportunities for improvement have already been identified by level one and two audits.

Also, building commissioning is a very important tool to be considered in developing a comprehensive way of approaching the assessment process in nonresidential buildings.

There's been quite a bit of effort in the rest of the U.S. and in other countries related to the disclosure of ratings, particularly related to nonresidential buildings.

And most frequently in the U.S. those ratings have been energy use ratings.

In the European Union and in other countries there also have been -- there also is disclosure of asset ratings, which are focusing not only on the energy use and building owner practices, but also the physical assets of the building and basing ratings on those.

Programs that provide the disclosure of ratings in the U.S. have looked at that disclosure at different points in time, not just at the time of some transaction for the building, point of sale, or lease, or financing, but also have explored approaches for periodically doing disclosures of ratings for buildings.

And so under AB 758 disclosure considerations need to look at a variety of ways to time the disclosure.

The next slide. Related to energy upgrade programs, the scoping report concludes that there's been a lot of success with the EUC during the ARRA period, but there also have been several challenges.

Clearly, there were tradeoffs intentioned between endeavoring to provide quality assurance, while conducting a streamlined program that avoids bogging down the upgrade process or discouraging the customer from taking action.

There also were concerns that contractors made that the assessment software should be calibrated to bills and should be designed to help get the customer to act, and that improvement of the whole situation related to software is an important activity.

There's a major concern that threatens, actually, the viability of doing market transformation and expansion of upgrade programs to achieve strategic planning goals in that the program is far from cost effective.

And a substantial issue is that, for example, non-energy benefits, which can be a major factor in the decision for a building owner to make upgrades, is not factored into their cost effectiveness at this point.

In the nonresidential sector there's been a lot of prior activity on individual measure kinds of improvements, but fairly strong lacking in having whole building programs conducted by the IOUs that would aim for deeper retrofits.

So, related to Energy Upgrade California programs and, you know, in the collaboration that's happened there, that really establishes a strong basis for us to build on, major success in integrating the work of local governments and regional areas with the IOUs, and with SMUD, and it establishes a very strong place for us to expand from.

The next slide. So, the State's Building Standards and Appliance Standards are also an important part of the tools that are available for AB 758.

The Building Standards requirements for alterations to existing buildings and the Appliance Standards that apply equally to equipment that's installed in newly constructed buildings, or existing buildings can save a major amount of energy and should be thought of as, you know, strategically as a way of getting after the AB 758 expectations.

However, compliance levels are difficult to determine and particularly the issue with HVAC change outs needs to be continued to be pursued.

This was an original strategic plan Big Bold Initiative to try to make improvements here. And even though there's been substantial effort to date, there's a continued need to keep focusing on that and we need to be making a breakthrough in that issue.

The next slide. So, the scoping report concludes that market education and outreach is a critical part of the AB 758's program effort to motivate behavioral change.

The Energy Upgrade California Program has worked hard to establish relevant targeted marketing messages, outreach activities to motivate action.

And under -- the EUC originally came together to minimize the market confusing by establishing one brand.

In extending the Energy Upgrade California into the future, the PUC has decided to extend the brand to cover small commercial, as well as residential and that's important.

This effort, again, establishes a strong platform for continued collaboration between the two Commissions and between the many parties that have been engaged during the ARRA time period.

The next slide. A major conclusion of the scoping report is that there is a need for centralized data resources. Project data is needed to inform program design and information, to provide information for market actors to make business decisions on an ongoing basis, and to provide information to assess risk for financing programs to enable loans to be purchased into the secondary market.

Over the long history of energy efficiency programs in California the PUC, IOUs, and the CEC have collected valuable data, but often that data has been made available -- has been collected for a single purpose and has not been managed in a consolidated location and has not been commonly available for public use.

As a result, market decision makers don't have access to this data to enable them to come to scale and for market transformation to be achieved.

So, this is an area that is of special emphasis in the scoping report, and along with many of the other pieces that I've been covering this morning, we'll be having panels that are talking about this, including one tomorrow morning on data.

So, that concludes my presentation of the summary of the conclusions of the scoping report.

And we'll now going to hear from Simon Baker regarding the PUC's policies and programs supporting AB 758 implementation.

MR. ASHUCKIAN: Simon, if you could just hold one minute. We have a few people in the back that are standing and there's a couple of empty chairs. If you're not using the chair next to you, if you wouldn't mind clearing it so that people who are standing could have a seat?

Okay, Simon. And I can advance the slides for you, too.

MR. BAKER: Okay, thanks. Good morning everyone. I'm pleased to be sitting here, side-by-side with my colleague, Bill. We've been spending a lot of time together, the two Commissions since -- well, it really started back in 2010, March of 2010, a workshop here. We gave a presentation at the time and pretty much since that time we've been working together really closely.

We've been really busy at the PUC. We've had portfolio implementation on the 2010-12 portfolio and now we're considering the 2013-14 transmission portfolios as well.

But amidst that very busy and hectic work life we've managed to find time to work together with our Energy Commission colleagues, and I consider that a good thing.

So, the next slide. So, I just want to just hit on a few points. A lot has been said about PUC activities and I don't want to belabor the points, but just to highlight a few things.

So, 758 directs the PUC to do two things, and Bill actually reminded me of a third, which is that we're to collaborate with the Energy Commission on the development of the program to avoid duplication of programs administered by the IOUs.

And so it's kind of interesting, you look at that and say, well, okay, avoid duplication. Well, that would happen if, you know, there were new sources of funding that were being brought to bear and we wanted to ensure that those new sources of funding were not duplicating the efforts of ratepayer dollars.

But for the 70 or 80 percent of the State that is served investor-owned utilities, I guess the way we see this is, really, let's make sure that the program that the Energy Commission develops is aligned with the PUC's own policies and priorities so that when it comes time for the PUC to exercise its jurisdiction to authorize ratepayer resources, to pursue all cost-effective energy efficiency, that's being done aligned with the priorities as they're emerging out of the AB 758 process.

And so that's really the work that we're doing with the Energy Commission is to make that happen, to make that come to fruition.

And the PUC also has a very specific role related to the investigation of financing options, as well, and we've been making some considerable progress on that front, which I'll speak to in a little bit.

So, we've been having regular meetings with the

Energy Commission staff, both at the staff level and at the Commissioner level, and that's been a healthy and good process, and we're looking forward to that continuing.

So, Bill reminded me, again, that there is a third role that we do have to report to the Legislature, and we actually did issue that first report in July. And a lot of it has to do with the work that's already been done in the current utility portfolios.

So, the next slide. So, as everybody knows, existing buildings represent the biggest source of potential untapped savings left in California and it's critical to achieving our ambitious climate goals.

But we also know that they're more expensive to get. There's a reason why they're the last source of untapped savings. And so it's going to require more diverse, more long-term strategies to mine these savings.

And the PUC recognized this -- recognized this back in 2008, when we passed the strategic plan. And the strategic plan was motivated, basically, by looking at the past history of utility program efforts, recognizing that there was too much of a focus on single measures, not enough of a focus on deep retrofits, on comprehensiveness, on the market transformation.

And, really, that's what the strategic plan is it tried to move the Commission's efforts and the utilities' efforts in this new direction.

So, the way our process works is we basically administer the utilities' programs over multi-year budget cycles and we provide policy guidance.

So, back in 2008 the strategic plan was a significant component of the policy guidance which informed the 2010 applications.

And those applications were then reviewed with an eye towards the strategic plan guidance, but then also kind of our foundational requirements to have cost-effective portfolios.

And it's that -- you know, there's really -- there's a dance and there's an art to making those things work together because our current cost effectiveness methodologies do not yet capture all of the benefits of market transformation activities. And that's just because it's hard to do. It's really hard to put numbers to a lot of these things.

And, you know, we welcome proposals from parties for ways to get that done in the regulatory proceedings.

So, for the past three years we've been overseeing the implementation of the 2010-12 portfolio. There's been a lot going on in that portfolio that I think moves us in the right direction and we're now kind of on the eve of approving a new budget cycle for 2013-14.

And the next full cycle will be in -- will be the post-2014 cycle.

And so from a time perspective, as the 758 action plan is developed, we heard from Dave that that's expected in winter or early spring to be adopted at the Energy Commission, and then that's going to be coming into our process at the PUC and we'll be back in that policy guidance mode.

And one of the key components of the policy guidance for the 758 -- I mean for the existing building sector is going to be the 758 program.

So, there's going to be kind of a second step here, though, where we're going to be considering what emerges out of this process from the perspective of, you know, what's appropriate to fund with ratepayer resources.

And if we do our job well over the next few months and working with the parties to make sure that all of the relevant voices are heard, that should be a seamless transition. So that what gets kind of brought out of the 758 process is already primed to be considered in our process. So, that's kind of our hope for this process.

The next slide. Okay, so I just wanted to hit on the -- just wanted to mention, too, that so in July of this year we issued a consultant report, it was the Harcourt, Brown and Carey report which identified financing gaps and needs in California.

And that was a really good report for level setting, I think, kind of what the needs are in California. And we're pleased to see that the Harcourt, Brown and Carey report featured prominently in the scoping report.

And we recently had a workshop, just this past week, at the PUC to review some of the recommendations from the IOUs' consulting team, they've also selected Harcourt, Brown and Carey to make recommendations for new pilots for financing.

And they're expected to issue their final recommendations on October the 19th. And so I just want to flag that for parties as an important next step.

Commissioner Ferron also mentioned that in May of this year the Commission passed a guidance decision to basically shape the expectation for what the utilities would file for 2013-14.

And that guidance decision really featured a renewed commitment to deep retrofit strategies, to new program delivery models and to maintaining the momentum of ARRA-funded pilots.

So, a few examples, the Commission made a long-term commitment to Energy Upgrade California and the Whole House Program as a market transformation program.

Bill mentioned that that particular program, you know, it's seen as the -- you know, kind of the flagship program for the residential sector and, yet, we face some challenges in terms of how to implement that program most cost effectively, and also how to appropriately value all the costs and benefits associated with that program because right now it's not penciling out as a cost-effective program in our current methodologies.

But the Commission did make a long-term commitment to that program, recognizing that there are market effects that are as yet quantified, which probably justify the ratepayer expense.

The guidance decision also provided increased role for local governments and continuing the local government partnerships and, in some cases, expanding them when they pursue deep retrofit strategies.

There is a new invitation for regional energy networks and those are basically intended to leverage the strengths of local and regional governments to diversify the portfolio of ratepayer-funded activities. And the Commission is now considering proposals for regional new networks.

The guidance decision also made a commitment to continue funding ARRA pilots in 2012, and as Commissioner Ferron mentioned, made a commitment to fund financing for at least $200 million over the next two years.

The next slide, please. So, what have we done lately at the PUC? Some of the recent developments are that the utilities made selections, recently, to fund 16 ARRA -- continuing ARRA pilots at an amount of about $8.9 million. And so that’s funding to continue through 2012. And that was important, I think, stop gap funding because ARRA funding had started to dry up and the 2013-14 cycle had yet to have been authorized.

So, there are also proposals to continue many of those pilots into the 2013-14 period.

The guidance decision put forward a really fast track for getting new pilots on the ground for financing programs. And the schedule for that is to have those launched by 2013 and to be scaled up by 2014, and so that’s a really aggressive schedule.

And we’re counting on the utilities, their consultants, and the parties and the Commission, itself, to move quickly to continue to make significant progress in that area.

The 2013-14 portfolios, as I mentioned, are currently under review.

We've got two REN proposals. One is from the Bay Area, the BayREN proposal and another is the SoCalREN. Both of those are under consideration and many of them continue -- feature continuing ARRA program proposals.

So, the Commission, per the schedule of the scoping memo, is planning to issue a proposed decision tomorrow, so stay tuned for that.

And another thing to flag is that on October the 12th, I believe, I'll have to double check those dates, but there is a data workshop that's happening in the Smart Grid proceeding.

And so, since this is such an important aspect of the recommendations that seem to be coming out of this process, I just want to make sure that people are aware of that data workshop.

Next steps for us, next slide, please. So, we're going to be continuing our collaboration with the Energy Commission on the action plan development in the coming months.

And in that process we're going to be working, as I said, to align the ratepayer components of that plan with the Commission policies and -- or the PUC policies and mandates.

And as I mentioned, cost effectiveness will definitely be a challenge. It's one of our core mandates; we can't authorize ratepayer funds unless they're deemed cost effective on a portfolio basis.

And we invite the parties to help the Commission to review the cost-effectiveness methodologies. Right now there's a proceeding underway to look at the standard practice manual, to look at our avoided cost methodologies, and consider making changes to our cost-effectiveness methodologies for the guidance proposed in 2014.

And there was an ALJ ruling that was released recently and comments came in on that, and were specifically addressing the questions of non-energy benefits.

And so we invite robust comment, we invite thoughtful proposals, concrete proposals, and collaboration among the parties to come to some consensus proposals for how to move this particular issue forward.

We're looking to hear from stakeholders on what elements of the plan that emerge out of this process are appropriate to fund through ratepayers.

So, to the extent to which those questions can already be thought about in this process here, at the Energy Commission, as I said, it will help us when it comes time for the PUC to be reviewing the plans in our process.

And we'll be formally consent hearing the Energy Commission adopted action plan in the guidance proceeding for the post-2014 portfolio cycle.

So, before I close I just wanted to make sure that I introduce George Tagnipes. George, could you just raise your hand, please?

So, George is going to be -- he's newly assigned as our liaison on the 758 effort.

Dave had mentioned that the Energy Commission is staffing up this effort; we are, too. So, we have Dave -- excuse me, we have George basically dedicated to this effort.

And so, if folks want to be in touch with us at the PUC to share your reflections, your thoughts, your ideas, you can contact either myself or George, or Bruce Tagnipes, who George reports to in the Energy Division -- Bruce Kaneshiro, excuse me.

And that's all I have for today.

MR. ASHUCKIAN: Great.

MR. BAKER: Thank you.

MR. ASHUCKIAN: Thank you very much.

So, do we have blue cards? Okay, we have two questions, blue cards. And if anybody else has blue cards regarding this summary, opening presentation, please get them to us right now.

We'll start with Gina Goodhill Rosen.

MS. GOODHILL ROSEN: Hi. Thank you, everyone so much for having this hearing, especially for Commissioner McAllister. We're so happy to be here.

And then I also, of course, want to mention former Commissioners who are working on this issue, Commissioner Douglas and Commissioner Eggert who have played a really crucial role, I think, in getting us to where we are today.

So, I'm with Global Green USA and we have been following this process really closely for the past three years, and really look forward to continuing to work with I think all stakeholders, but specifically the environmental community and the affordable housing community as this process continues on.

This was a great presentation today. My comments focus a little bit more on what was actually in the scoping plan, not all of which was mentioned here today, but that I wanted to bring up, briefly.

I think tomorrow is going to focus more on programmatic goals, so I'll leave that part to tomorrow.

Is that correct? It looks like that's what the agenda says.

COMMISSIONER MC ALLISTER: That's correct.

MS. GOODHILL ROSEN: Okay, so I'll focus that part on tomorrow.

But two alternative questions that were mentioned in the agenda were on trigger mechanisms and then one on not-energy benefits. I just wanted to touch on those because I think they play into what was talked about today.

The scoping report and the agenda asked what the various trigger mechanisms were that the scoping plan at the Commission should look at in creating this program. And they suggested three different types of triggers for energy ratings. All of those are great suggestions.

I think that what's going to be key moving forward is to make sure that whatever triggers we use are not arbitrarily chosen, but connect directly to the goal for the program.

So, I think all of these suggestions sound great, but we need to make sure that in using these suggestions we're actually able to get at our program goals.

So, for example, if all these three triggers combined are only going to touch 50 percent of the population and we need to touch 75 percent, this is all made up right now, but in the goal we need to be able to change those triggers to really make sure we're hitting that.

So, I think the question is less do these triggers work as ideas and more do these triggers tie into our goals.

So, I think that's going to be really key moving forward and it's something that we would really love to see the Commission look at.

And then, secondly, non-energy benefits were mentioned as an alternative question and whether or not they should be recognized in the cost-effectiveness criteria.

We strongly support using that energy benefit in the cost-effectiveness criteria for upgrade programs. Our understanding of the goal of AB 758 and of upgrade programs in general extend far beyond the cost effectiveness. It includes health benefits, it includes environmental benefits, it includes comfort for the homeowner. All of these things need to be considered when we're developing our program.

These -- and we also think that there shouldn't be a distinction in ratepayer-funded programs and other programs in using this. This should be considered in all programs, these are just as important as the energy benefits. And so, it's something we really want to have the Commission continue to look at moving forward.

And so we'll talk about program goals tomorrow, but I just wanted to bring those two things up.

And once again, we're thrilled to be here and we'll continue to -- I'm sure I have many more comments.

COMMISSIONER MC ALLISTER: Thank you, Gina. You know, I wanted to actually sort of see if Simon might have occasion to comment a little bit.

Because one of our trickiest issues is the cost effectiveness and there are -- there's actually some really good work being done to think through which tools to apply, when, and under what circumstances to evaluate cost effectiveness.

I guess maybe you could just give us a flavor for what's going on at the PUC with that, there have been some workshops, et cetera, about cost effectiveness, and so what kinds of questions the PUC is asking and open to asking going forward.

MR. BAKER: Okay, yeah. Well, so the Commission basically set off a phase of the cost effectiveness review, basically the phase two of the cost effectiveness review.

And the key components of that are kind of in three parts. One is to look at avoided cost methodologies, the other is to look at the standard practice manual, which encompasses non-energy benefits, and then third is to look at our methods for quantifying energy savings.

So, when it comes to calculating cost effective in the PUC processes, it's calculated on the basis of net benefits after accounting for free ridership. And that makes sense because, you know, we don't want to be spending ratepayer resources on activities that would have happened in the absence of the program. It makes sense.

That said, however, the current Commission methodologies for quantifying savings do subtract for free ridership, but they do not yet take into account other market effects, as many other states have.

And the Commission has acknowledged that and the guidance decision welcomed proposals from the utilities to quantify market effects and is right now considering, in the 2013-14 budget applications, deciding the extent to which market effects can be included in the energy savings assessments.

What cost methodologies, those are kind of more of a technical nature and they have to do with, you know, are we properly valuing the energy and the capacity benefits. And there's -- you know, that could swing several different ways, I think.

Perhaps a little known fact about our current avoided cost methodologies is that we're using gas prices that are perhaps not the most up to date gas prices. And so, that's actually, you know, a countervailing pressure.

We're also using carbon prices that are at like $30 a ton and we're hearing a lot of voices from parties in the proceeding that come time for 2013, when the cap and trade mechanism goes into effect, we should be using that price.

We're also hearing from other parties that, yes, in the short term, but we also need to have a long-term price trajectory for carbon.

So, those are the kinds of things that are being looked at on the avoided cost side.

Now, as far as the standard practice manual, there questions that we're looking at are like are we using the right tests to evaluate our -- the utilities' programs as a whole, or perhaps categories of programs that are focused on market transformation.

We issued a white paper, recently, looking at different approaches for addressing non-energy benefits, either by attempting to quantify them on the benefits side or attempting to make adjustments to the participant cost by subtracting out the share of the total costs that are attributable to the benefits, or the energy benefits or the non-energy benefits.

And then the third alternative is to look at the program administrator cost test in lieu of the total resource cost test.

So, all of those options have kind of been put on the table and we're hearing from parties about those.

Another dimension is should we be using a different discount rate? Right now we use the weighted average cost of capital. And some parties have, you know, suggested that we use the societal discount rate, much as the Energy Commission does.

And so the Commission's going to have to grapple with these questions and, you know, it really kind of comes down to what authority the Commission believes that it has under legislation, the current mandate that it has under legislation to use ratepayer resources cost effectively.

And I think it's important to note for people that I, personally, have searched the legislation and I invite anybody to tell me if I've missed something, but there's some things that aren't mentioned as kind of in-scope for the PUC's use of ratepayer resources. And some of those involve things like economic development benefits, things like health benefits and things like jobs. So, those three things are not prominent, they're not mentioned in the legislation, really, when it comes to ratepayer resources.

But that's not to say that the Commission, you know, can't provide some leadership in those areas as well.

So, it's going to be interesting to see how this plays out, Commissioner.

COMMISSIONER MC ALLISTER: So, thanks very much. I mean, clearly, you're very much in the weeds on this and weighing all the different options.

And I think it just highlights one of the challenges we have here is to -- during the 758 proceeding we need to -- there's sort of a chicken-and-the-egg problem. You know, our goal -- if everything that's funded by ratepayers has to be cost effective, then that sort of constrains us in certain ways.

We also have policy goals that are out there, that are very aggressive and we need to meet. And sort of we've got to make sure that somehow we find pathways that link those two up either within the PUC realm and, you know, the ratepayer-funded programs, or we're complementing that with some other, hopefully, you know, more flexible programs that can maybe expand a little bit and complement what the ratepayer funds are paying for.

And so these are kind of some of the big issues that we have to get into, in 758, that I think we all have to bring our A game to like think through it and sort of figure out what's doable and, you know, keep our eyes on the long term.

And if we need to go, sort of argue to structure the things differently, then sort of agree to do that and then chart a path to do that.

So, I think there's a lot of, I think, excitement about doing that, but we've got to be -- it's already a fairly eclectic, you know, set of circumstances here that we're going to have to contend with in order to move this ball forward.

So, maybe I'm stating the obvious here, but I think the -- you know, thanks a lot for being here and we appreciate the difficulty of the challenges. So, all right, thanks.

We have more questions, Dave?

MR. ASHUCKIAN: Yes, actually, we have about six more people who want to make some comments and questions, so I recommend everybody move as quickly as possible.

MR. PENNINGTON: We have time for two more, maybe, within the agenda?

MR. ASHUCKIAN: Well, we have about five minutes, so we're still doing okay.

So, let's have Erin Niemela.

MS. NIEMELA: Thank you, Erin Niemela representing the Efficiency Council, which is a trade organization that has more than 78 companies providing energy efficiency products and services.

And my comments are actually really general so I'll keep them very brief.

Basically, just wanted to thank the Commission and, particularly Commissioner McAllister, and the staff, and also the PUC Commissioner Ferron, and the staff there for all the work they've done to date.

I want to underscore something that Mr. Baker just mentioned, which is the Efficiency Council definitely supports some value attached to the jobs created by what you'll be considering in this process.

A recent study by NexTen indicated that for every $100 million invested 9,000 jobs result, and an extra $50 million in additional tax revenue.

And then also just want to underscore the benefits and opportunities, as have been touched on today, of sending the right signal to the marketplace in terms of ratings and disclosures.

And would encourage you to weigh those things carefully, and we'll be weighing in. Thank you.

MR. ASHUCKIAN: Thank you.

Next, we have former Commissioner Jeff Byron. And I want to acknowledge Commissioner Byron for attending today. Thank you.

MR. BYRON: Thank you, Mr. Ashuckian. Jeff Byron.

And I think the affiliation I'd like to associate, Commissioner, with my being here today is the National Board of the Clean Tech Open, which represents start-up companies, that entrepreneurial spirit that Commissioner Ferron referred to in his comments.

I just want to make three points, if I may, first of all, the importance of this proceeding and AB 758, the enabling legislation. Commissioner Skinner was very thoughtful and showed a great deal of, how can we say it, foresight and innovation in her legislation, and understanding the roles of the Energy Commission, and the PUC, and the collaboration that I'm seeing I think is just excellent.

It's so wonderful to have you engaged on this and Commissioner Ferron, as well. And, again, I just can't emphasize how important this is. And I think it's the first workshop that's brought me back to Sacramento since being a Commissioner.

But Mr. Pennington, let's get going a little bit faster, Mr. Pennington.

MR. PENNINGTON: It's time.

MR. BYRON: Of course, I don't forget why this is moving not as quickly as we wished and that is, of course, all the additional workload that we put on yours and Mr. Ashuckian's staff in implementing the ARRA projects and many other efficiency projects.

But we certainly want to see the continued collaboration and the movement on this because I think addressing the existing building stock is so important.

Previous Commissioners were mentioned, but I can't help thinking about former Commissioner Rosenfeld and the influence that he's had on all of this, including, probably, the Assembly Member herself.

And there's tremendous expertise that's in this room and amongst the staff. I just can't emphasize enough how important I think this is.

Second, as an informed citizen I decided, after having been involved in approving Energy Upgrade California which, again, I think is a tremendous program, to try it out as an informed citizen. And I've been through that process and we know there are challenges with it.

As good as it is, it's a very expensive way to implement a lot of the things that you're trying to do. And no one knows that better than the staff, I'm sure.

So, I just wanted to suggest, my third point, just a couple of key principles which I've already heard from you, Commissioner McAllister, and Commissioner Ferron.

But, please, go after this as cost effectively as you can. It's extremely important that it be low cost. And the second point is if it has to be consumer or customer centric, it's got to be beneficial to customers.

You need to always keep in mind their trust from the get-go. I don't mean to imply, having been through this, that I wasn't trusting but, you know, you do that entry audit, the exit audit, the verification audit, it's when does it end? As a consumer, the benefits that I received from it were tremendous, but there must be a way to engage customers more quickly early on and cheaper.

So, emphasizing the customer benefits has to always be foremost.

I guess I'd like to pick up on my fourth point, my fourth principle would be what Commissioner Ferron mentioned, that entrepreneurial spirit. I think you know, as a former Commissioner I was always -- oh, what's the best way to put it, interested in seeing the investor-owned utilities releasing the data to customers. And we're beginning to see that, now, by recent orders from the PUC. We have been seeing it.

But I know, just recently some of the decisions that the PUC's been making, I believe once you get that data into the hands of customers and allowing customers to let it get to third parties, you're going to see a lot more innovation and access to new technologies.

And the fifth point, of course, the fifth principle is the emphasis on the verification and the credibility that creates for customers, as well.

Commissioner, thank you very much for allowing me to speak. I think you are certainly on the right track. It's great to see you engaged, as you are, on this subject.

COMMISSIONER MC ALLISTER: Thank you very much, Commissioner. And I want to acknowledge all your hard work over the years here, and I've got some big shoes to fill, both yours, and others, and Art's in particular. His vibe is still through the building, absolutely.

But I agree this is a very, very big deal. And we'll be talking about the data issue tomorrow morning, at the first panel of the day, and I think there are a lot of potential pathways there that can help the marketplace. So, there are a number of them. So, I'm really exciting to have that discussion.

MR. BYRON: Thank you very much.

COMMISSIONER MC ALLISTER: Thank you.

MR. ASHUCKIAN: Next, we have Sophia Hartkopf.

MS. HARTKOPF: Hi, Sophia Hartkopf with Heschong Mahone Group. We're a mover with the Energy Upgrade California Program in various locations in the State.

Thank you for this hearing. We've been looking forward to hearing about the results of the scoping plan. And as a result of hearing the results, and reading through it myself, I have a comment and a question.

The first question is could you, Bill, elaborate a little bit more on the BPI emphasis? And the summary that you gave earlier was that it was definitely going to be a clear part of the program moving forward.

And then a comment, earlier this morning and throughout the summary there was a lot of emphasis on the word "contractor." And I'd like us to sit back and really think about how there are multiple ways to effectively deliver energy retrofits in the single-family and multi-family sector.

And the contractor is absolutely one of those pathways and has been very effective, but there are other pathways as well and I would emphasize that we need to really think about those multiple pathways and address those multiple sectors.

Thank you.

MR. PENNINGTON: Just quickly related to your question about BPI, particularly for single-family upgrades the BPI standards are very important. We have relied on them strongly during the ARRA time period in program development and have been trying to align with them wherever possible related to the Home Energy Rating System Program.

Those standards continue to evolve, they're not necessarily perfect. And, you know, we want to stay in touch with their evolution.

In situations where they don't maybe fully cover what we need, then we need to be addressing gaps related to them.

There is not a lot of standard work related to multi-family in the BPI program and that's an area where we're going to need to develop approaches that go beyond there, recognizing the evolution that they are trying to get into that sector as well.

Thank you.

COMMISSIONER MC ALLISTER: And on the pathways I totally agree with you and I think, you know, the more expertise and insight you can bring to your comments and get on the record and, you know, get discussion going about, the better we'll all be. So, thanks.

MR. ASHUCKIAN: Do we have John Proctor?

MR. PROCTOR: Hello, I'm John Proctor from Proctor Engineering Group.

Just a quick comment on what Mr. Pennington mentioned about getting compliance with the existing standards for replacements in the HVAC arena.

I looked at all the permits that were pulled in Sacramento in 2011 and HVAC was 26 percent, by the way the largest number of permits pulled. But looking at the number compared to the lifetime of air conditioners, there were 2,000 permits pulled and there should have been at least 10,000.

So, that's an area that really does need our attention. Thank you.

MR. PENNINGTON: Just a quick comment. We have recognized the Sacramento area as probably being the best performing area related to pulled permits as a result of SMUD's work to require them in their programs, and their active effect on the marketplace.

So, if SMUD is only at 25 percent, you can tell that we have an issue. If Sacramento is only at 25 percent, we've got something to work on. Thank you.

MR. ASHUCKIAN: Okay, we have Bruce Ray, who is on WebEx, although I think we're having a little bit of a problem identifying which person it is there, so we can unmute him.

But I have his question, so I'll just go ahead and ask it and we'll see if we can get this figured out.

"Will the CEC be looking at new business models to move our non-ratepayer and private sector capital into energy efficiency?"

COMMISSIONER MC ALLISTER: I'm not sure who's on the spot here but, yes. That's a pretty easy one, actually. I think the PUC is working quite a bit on that. I mean there's an ecosystem on financing that sort of has arisen like a phoenix out of the PACE experience to try to understand what other options would enable this marketplace to tap into all the capital that's on the sidelines, which is humungous, and put together products that the capital markets actually feel good about buying and investing in.

So, I think -- so, the project level business will -- really has -- there are a lot of ways the entrepreneurial spirit will -- ways that we can't even anticipate here, which is why we want them to do it. The regulators aren't going to talk about -- you know, aren't going to dictate business models, absolutely.

But enabling the financial markets and bringing new financial instruments, or providing the underlying data tools to enable the analysis to be done by the analysts in the capital sector, in the financing sector to do the right analysis, get their understanding of risk down so that they can actually finance this work is really key to making it all take off.

And so I think we don't know the answers and we may not be able to figure out the answers, but what we want to do is set the stage.

So, I think, hopefully, that answers the question.

MR. ASHUCKIAN: Okay, we have Matt Golden from Efficiency.org.

MR. GOLDEN: Thank you. And thank you, Commissioner, for having these couple of days to really dig into some of these topics.

I want to just put on the table that I hope that over the course of the next few days, and kind of in and throughout this AB 758 proceeding that we can really take a really strong look at where we're going to go.

And for California, over time, how much that's actually going to cost to make sure we create a system that can attract the kind of capital that's necessary, that actually works for the companies in the space that actually enables them to be profitable in delivering these services and then, most importantly, works for consumers.

And I think the underlying lesson that I've learned, personally, is that probably, even though we all have a lot of experience and different kind of angles over this, that especially over the last few years that I believe that it's probably not possible to divine and design a system that's actually going to roll out without really massive unintended consequences.

So, I encourage everybody here to think about how to align interests in the marketplace in a way that really makes it in the contractors' interest to do quality work and, ultimately, in the homeowners' interest to actually buy those services.

And we should be very careful, though phase three of this AB 758 proceeding is talking about regulatory implements, which I personally do actually believe we will need to bring to bear at some point, but we should make sure that we do that in a way that doesn't turn energy efficiency into a tax, because I think that will have really negative consequences.

And we probably, while we may have the regulatory authority, we probably don't have the political capital to turn this couple hundred -- this effort that we all believe in, that will likely cost well above $100 billion, maybe even approaching $200 billion of really homeowner consumer spending in the marketplace.

And the beauty of energy efficiency, what attracted me personally to this space is this multiple benefits where we can do well by doing good; where we can put this in the interest of homeowners to make these changes because we're generating a cash flow.

And not have this turn into something where we're basically forcing people to make very expensive decisions that may or may not actually pay off.

And so I encourage us to look at the lessons we've learned and I think we have learned some really painful lessons over the last few years, and recognize the elephant in the room which is we have an Energy Upgrade California Program where we have learned a lot and it's evolving, but has not worked well in the marketplace.

We have companies that have been experiencing a lot of pain and it hasn't had a lot of consumer uptake.

And I just hope that we can step back from some of the policies that we've all been very invested in and think what is this going to look like in ten years, when we're actually doing a half-a-million of these darn things a year; how much is that cost? Can we afford it? How do we put this in everybody's interests.

So, I thank you very much and I look forward to the next couple days.

COMMISSIONER MC ALLISTER: Great. Thanks Matt, I appreciate it.

I mean one primary lesson we've learned from -- that you see in the ARRA-funded programs is that we need to have greater flexibility. We've got to have ways that we can change course along the way. And one big question we need to be discussing here is how we can build that into the system and where -- what things can the Energy Commission or the PUC do, and what things maybe we shouldn't do if we're going to compromise that flexibility.

So, we need to be judicious, I think, about what those big -- you know, the top 10 or 15, or however it's going to be, initiatives we put into the action plan so that they're the ones that really are going to work leveraging our authority sort of properly.

So, thanks for that, Matt.

MR. ASHUCKIAN: Okay, we're going to have Mark Berman and then after that we'll take a ten-minute break.

MR. BERMAN: Thank you. I'm Mark Berman with Davis Energy Group and we have been involved in implementation of retrofit programs through Energy Upgrade California and through a PIER Grant, as well, across the State.

And I'd like to talk about cost effectiveness as we've heard about quite a bit just now from Matt, from Commissioner Byron earlier, about the multiple visits to somebody's house that's participating in Energy Upgrade California.

The PUC has had very low uptake; that is the elephant in the room. We've learned a lot and one of the things we've learned is we've got to improve the value proposition.

And one of the reasons the value proposition is not good right now is because of the high cost of home energy assessments.

And, basically, when I talk about home energy assessments, I'm not talking about it from the rating viewpoint. The goal here is to get to a work scope, a proposal that can be made to the homeowners.

And one of the things we've noticed in our work across the State is that, for example, but it’s a critical example, when we would look at audits, or home energy assessments and modeling work done on single-story, L-shaped ranch houses, as one example, whether they were in Santa Rosa, Palmdale, Los Angeles, Stockton, or a variety of other places, after 8 hours or 12 hours of audit work -- I’m talking about work hours, two people in a house for five, six hours or in total, and another couple of hours of modeling, the results were the same.

Insulate the attic, air seal, duct seal. If the HVAC is 25 years old, replace it. Run a Model D and a Model J and downsize it.

How many times do we have to audit, and assess, and model the same style house and get the same answer to know what to do?

So, my question is and, obviously, I feel a little passionate about this, but my undergraduate, pardon me, is in industrial engineering. When I see a place where we can get efficiency I’m after it 4,000 percent.

And I see one and it’s as big as all outdoors, and it’s in the assessment process.

So, my question is, as the Commission goes forward, both Commissions, is there an openness to new ideas, new approaches that might yield time savings, money savings and enhancement of the value proposition, but are a little different from what we've done in the past and what we, in our heart of hearts, might prefer to do which would be audit every house thoroughly, model it thoroughly, et cetera?

COMMISSIONER MC ALLISTER: Thanks for that. And I mean I'm passionate about this, I know all the staff that's working on it is passionate. And so you can definitely, you know, take that to the bank so to speak.

I mean the short answer is, yes, we're very open to that. And I definitely are very open to that, you know, with the caveats that we have to have accountability at the project level, we have to have consumer protections in place so that when somebody does work it has to be -- there has to be some way to know whether it meets a standard or not, right.

So, absolutely, there's good work going on in different parts of the State trying -- you know, looking at housing, like demographics, housing characteristics and trying to sort of, you know, go to that place that, okay, well, if you're a contractor and you really want to go where the savings are here's a geography that you can identify and go -- you know, at this point you're kind of regulated to knocking on doors.

But I think that's one of the questions for several panels. The design panel for sure, the data panels. I think there are a lot of different ways we can try to get at what you're describing. And I can't promise exactly, obviously, what that's going to look like because I don't know.

But I think that flexibility, you know, we want to look for the places where there's really added value in bringing those kind of more advanced tools to it, as long as we don't sacrifice the accountability and the quality aspects because those have to be there, too.

If we want to build an industry, we've got to have contractors that have the faith of the customers in there, that's essential. The contractors will thrive if they can develop that and do it cost effectively.

So, I think, you know, we're roughly on the same page, but there's a lot of unknowns here that we need to talk through. So, thank you.

MR. BERMAN: Great, thank you.

MR. ASHUCKIAN: Okay, there was two folks who submitted a blue card, George Nesbitt and Avery Kitner, one on WebEx and one in the room.

George indicated that his was on panels, so I'd like to encourage folks who didn't have a chance to say their questions to go ahead and question or provide your question or comment during the panels.

With that, let's take a ten-minute break. Let's be back in the room at ten minutes to 11:00. We're running a few minutes late but, hopefully, we'll be able to catch up soon.

(Off the record at 10:41 a.m.)

(Resume at 10:53 a.m.)

MR. ASHUCKIAN: Okay, we're going to get started here. Again, this is -- I want to thank everybody for coming. This is the first panel and we're going to be talking about residential ratings. I mean, I'm sorry, the residential upgrade programs.

I want to introduce Christine Collopy; she's sitting here at the table. She is our new Program Manager for this program at the moment and so -- I guess I shouldn't have said "at the moment."

MS. COLLOPY: That's awesome, at the moment.

COMMISSIONER MC ALLISTER: And, hopefully, for a while longer we'll just say.

MR. ASHUCKIAN: Yes, yes. And she has been responsible for kind of getting everything together for this workshop. So, I want to give her a big thanks for that.

So, Christine, I'll let you go ahead and introduce your panel.

MS. COLLOPY: Thanks.

(Applause)

MS. COLLOPY: Well, thank you. I didn't do it alone. Believe me, a lot of other folks are equally responsible for making this happen today.

So, thank you all for coming. We have a lot of folks here, we have equally amount of folks on the WebEx, so we have great attendance today.

We are on Panel 1 and I just wanted to remind you on the screens in front of you are all of the questions that you see on your agenda.

As Dave mentioned earlier, we did a mapping sort of process in order to get coverage of all of the questions.

We asked our panelists to focus on specific questions that we felt they really were experts in. So, when they each provide their seven-minute presentation they're going to be addressing questions that aren't necessarily in the order on your screen, although they will announce the questions that they're addressing.

So, those questions will be on the screen for the duration of the panel.

So, today we are exploring how the design and implementation of residential energy upgrade programs can effectively serve consumers, provide cost-effective upgrades and achieve scale.

The panel before you, these are folks that I have worked with over the last two years on Energy Upgrade California, with Energy Commission's ARRA funds. I was the program manager for that program, as well.

So, we have a really talented group of folks that are going to be able to represent the stakeholders throughout the State today in a really great way.

So, we're going to go ahead and start off with Devon today. I'm going to do a little bio about each person before they go ahead and start their presentation.

So, Devon is representing contractors of the California Building Performance Contractors Association -- the California Building and Performance Contractors Association, otherwise known as CBPCA, and Efficiency First California.

Devon works through Hartman Energy Strategies to engage communities around the power of energy efficiency in buildings.

Devon is the co-founder of Claremont Home Energy Retrofit Project and the Pilgrim Place Energy Efficiency Project.

He's also a developer of VGM Santa Barbara, strategic consultant to home performance matters, and a board member of CBPCA and Sustainable Claremont.

He has been working for the last four years with COGS in various cities, in L.A. and Riverside Counties to educate communities on energy efficiency and to encourage participation in the Energy Upgrade California Program.

So, I'm going to turn it over to Devon for his comments.

MR. HARTMAN: Thank you very much. Well, based on the overviews presented this morning, it seems like, from our perspective, that we're really all on the same page.

The overviews were comprehensive and, actually, very exciting from our point of view to see that it feels like all of the issues really are on the table.

The devil, of course, is in the details about how we're all going to get there.

The good news, of course, is that knowing many of you in the room there is a huge mass of intelligence right here and on the web focused on this effort. So that, to me, is very optimistic.

I'm representing contractors from CBPCA today and so most of my comments will be really from the contractor perspective to try and help focus our perspective because if you think about it, the numbers are staggering.

Depending on the number of homes that you're using as targeted to be retrofitted in the State of California, let's just say 11.5 million, in order to retrofit 11.5 million homes in the next ten years we would need 7,700 contractors doing three jobs a week, average $20,000 a job, netting about $3 million a year, employing somewhere around 20 people each.

And in order to do 11.5 million jobs in ten years we would have to have those 7,700 contractors start today and do 150 jobs each, per year for the next ten years. That's a daunting number.

We also know that -- I personally know four HVAC contractors who have dropped out of doing home performance; it's too hard they say. They make way more money changing out boxes than crawling in attics, and doing assessments, and doing the hard work. It's more profitable to switch out boxes, upgrade the tonnage and move on.

So, I think a lot of us in this room are concerned that we are going to have a party and get all dressed up to retrofit all the homes in the State and that the contractors may not show up.

The good news, of course, is that there are many contractors who are achieving success. We have programs all over the State that are working.

My first question is number one, what customers are choosing building performance upgrades today?

To me that can be summed up in one sentence, homeowners who are thoroughly educated in the many, many benefits, up to 20 at least, in the power of energy efficiency in retrofitting their buildings, and who have contact with a reputable contractor are moving forward doing retrofits.

We have three pilot programs working in Claremont, California. One is the CHIRP program. They set a goal of retrofitting 130 houses this year. They're working on their 128th home in one city, as of last week, so they're ahead of schedule.

The next goal that they're going to set is the goal of retrofitting 1,300 homes in the city, which would represent ten percent of the city.

The reason this can work and the reason the Energy Champion Program in Claremont is working, it's the number one energy champion in L.A. County by far, by a factor of five or ten, is because we have a highly educated community in the benefits of home performance and we have set exciting goals around that project. And we have contractors who are capable of doing that work in a high quality way and expanding their businesses along with the market, as it expands.

Where are the opportunities for scaling upgrades? I think there are two opportunities. Number one is marketing and the second one would be in execution.

I would like to suggest that under the marketing if we could focus on hyper-local activity, in other words go into a single community and then go wide and deep in our education in the benefits, and then work with community organizations to partner in public/private cooperation partnerships with contractors who are capable of doing this work, and also continuing the education process then we have a measure for success.

I think we need to educate on the benefits of energy efficiency, not advertise the program or rebates as such.

I think the program of EUC can validate the fact that this is an important thing to look at from a community's point of view, but advertising the EUC or advertising the rebates is not educating to the benefits. And I think the education to the benefits will spur activity.

I think we also need to make sure that all the rebate and energy efficiency programs in the State are a part of the deep energy whole house system. So, any rebate, any particular piece, from appliances all the way through all programs at the utilities need to be pointing to the larger whole house system so that we don't have confusion in the marketplace, and so that we don't have an opportunity cost of homeowners thinking that they have participated in energy efficiency, but not having really been exposed to the whole house system and leaving lots of efficiency on the table.

Energy efficiency is a pie we can continue to take slices out of.

What does that bell mean?

MS. COLLOPY: Your seven minutes. So, Devin, did you want to just touch on one of the other questions for a few minutes.

MR. HARTMAN: That would be great. I think we're talking about milestones and metrics. I think these are really critical, milestones and metrics to measure success.

I think in terms of the marketing programs, I think if we take the classic measurements of any marketing program and you compare the dollars spent on a particular initiative to actual leads, and contracts being sold. So, any program manager, if they could be tied to actual leads and contracts being sold, I think we would learn, we'd have an internal feedback mechanism that would increase our flexibility and effectiveness around marketing programs.

I think just counting, for example, the number of engaged communities or engaged community organizations who are paired with a respectable contractor in their area, I think we might net out some interesting metrics.

And that, in fact, is the successful metric. So, the more we can duplicate the number of communities that are engaged and educated, paired with a partner contractor that is a level of success that I think would net out some interesting results.

I think we need to measure speed of uptake. So, for example, we need flexibility and speed in the process, which will also drive down costs.

So, if we're measuring, in a community, the increasing number of retrofits that are being accomplished over a period of time and measure to that, and figure out what is causing that or hindering that, it would be a fantastic metric.

As well as measuring the number of retrofits that contractors are capable of achieving over a particular period of time, then we could back up and see what program contingencies can be fixed in order to speed up that number of retrofits per contractor that are being done.

So, I think that's good.

MS. COLLOPY: Thanks Devon.

COMMISSIONER MC ALLISTER: So, I just want to actually chime in really quickly and not ask a question but say I know on number 6, the quality assurance piece, I know CBPCA has a lot of great stuff to say about that, so it would be really good to get that included in your comments. And, you know, I know you're sensitive to the quality and you're also sensitive to sort of the requirement burden.

And so, you know, if you could help build the record on what some of the solutions to that -- you know, it's a tension that is kind of inherent. So, I'd appreciate not only the comments you made but, you know, additional focus particular on that issue. So, thank you.

MR. HARTMAN: I think we could categorically state that as contractors we do not see a conflict in increasing the speed and number of retrofits, decreasing friction in the process, with increasing quality as we go forward.

Any professional business in a strategic plan wants to increase revenue, wants to increase throughput, but they will never do that at the expense of customer satisfaction or quality of product.

We feel that very same thing. And as we're talking about speed and efficiency just know that from our perspective we are also extremely concerned with increasing quality. Not even keeping it the same, but increasing quality and customer experience at the same time.

MS. COLLOPY: Great. Thank you, Devon.

Next up is Tiger Adolf.

Tiger is the Director of Program Design and Market Development at the Building Performance Institute.

Tiger specializes in the program design aspects of developing robust contractor networks for residential energy efficiency and advises on program development nationwide for home performance contractors, with verifiable results that satisfy customer needs while achieving utility, State, local and community partner goals.

She led BPI's efforts in assisting CEC, the PUC, the investor-owned utilities and local governments in rolling out ARRA-funded whole house retrofit programs.

Tiger.

MS. ADOLF: Thank you, Christine. Thank you, Commissioner, for having us here today.

We have worked closely with the State for the last two years in getting this stuff moving forward. And let me start out by saying that this whole building stuff is just a bunch of BS. It's all building science and it's all the same building science whether you're in a customer's home who's paying for it, whether they're going to get a rebate, whether it's a low-income home, a multi-family building it all revolves around building science.

So, the training that goes with that for workforce education and that kind of development is important to make sure that everybody's on the same platform and getting basically the same kinds of instruction around the same kinds of things that they need and making that broad-based.

So, the Commission has chosen to adopt BPI standards in a lot of their efforts because we are national standards that are recognized across the country and have been around doing this for almost 20 years.

So, that gives a solid platform to train to. We don't do training, but those that do training appreciate that solid platform to build a curriculum around. And it's the same building science across all of those different things, which can help improve the customer response, as Devon was saying, by educating the customer about not just the benefits of energy efficiency, but why the contractors that meet these particular standards are better than the ones that are just out there floating around maybe with license, maybe without, pulling permits, maybe not. But this is an elite kind of workforce that you're developing.

So, one of the things that I think the ARRA-funded programs rather failed to do was to address building science as a whole.

The programs focused by an large on building analyst and not on a well-trained, well-rounded workforce.

The things that are missing are the installer level certifications. The people that actually crawl in the attic and in the basement and do the work are not the same people that do the diagnostics and data collection in most instances. You need those people to match up.

BPI standards are supervisor level for the majority of them right now, although we do have the entry level residential air leakage and insulation installer, and that's the person that really needs that training. Those are the people that are going to make the difference in whether the blower door results match up or don’t, ultimately.

So, you know, you want to get down into that, the same with HVAC techs. Let’s just say Nate, for example, has a great technical insulation certification and those guys will do exactly what they’re told to do and they’ll get it right every single time, if they’re told to do the right thing in the first place.

So, when you match them up with, for example, a BPI air conditioning and heat pump professional supervisor who understands the house is a system, understand how that system is going to integrate then you have a love match and you have a team that’s going to work together and get the results that you’re after.

So, I hear a lot of back and forth between the quality assurance inspectors, both for home performance and weatherization, saying these guys just don’t get it. What they don’t get is well-rounded training and a well-rounded workforce that they can rely on coming in as prepared.

One of the things that we are doing, with the support of DOE and NREL, under contract, is to provide four new certifications to the market, those being energy auditor, crew leader, installer and quality control inspector.

On the weatherization side, DOE expects that to be a quality control inspector internally, on every single crew, to be sure that when the job is done, it's done right.

The other thing that we see will be applied for this quality control inspector is a quality assurance consistency across the board.

Regardless of who is doing QA, whether it's BPI QA, RHA QA, somebody else doing QA, if you can have that certified quality control inspector who knows how to do quality assurance and apply the standards that they're being required to follow, then you're going to have a better product.

Quality assurance is not about dinging the contractor. Quality assurance is about consistency and making sure that you're getting the product that's paid for, and also about helping the contractor have a continuous improvement process.

So, when you're having a lot of fails, it's not always about the contractor not wanting to do the right job, very often it's about the quality assurance person not being equally qualified with the contractor, not having a consistent set of quality assurance standards to follow, and not having that plan to be able to deliver that into the market the same way the contractors are delivering.

the other piece of that is when the standards are in motion you're building on the standards. Every jurisdiction is adding a little of this, a little of that and the contractors have no consistent platform, then you're not going to have good quality because they're always playing this juggling game of trying to remember which standard it is they're applying in that particular jurisdiction. So, we want to make those all consistent.

Let's see, another aspect that is really super important is the marketing sales and business management training. I'm not going to harp on that, I think you all understand it.

But being able to deliver those pre-qualified candidates that have work history, I think there is room in this industry for an apprenticeship kind of program, and I'll talk to Bill about that offline.

But I think it's something that I'm seeing organized labor looking more at as they recognize that they need to move into whole building performance if they are going to stay involved in the industry.

I talked about quality control quite a bit but I think it's really important to know that that accountability as quality, as Devon mentioned, don't need to be separated. You can speed up the process. We have ways of doing that and BPI's being doing that for ten years with the NYCERTA Program, with really good results. We have a five percent inspection rate and then there's a statistical over-sampling.

And what they have are really high quality installs, very satisfied customers, and contractors that can deal with that level of inspection.

In some of the EUC programs you've been having four, five, six hundred percent inspection rate and that's not tolerable for either the homeowner, whether it's a former Commissioner, or just an average homeowner, nor is it tolerable or cost effective for the contractor. They won't play, they won't participate if they can't make a profit doing this work. And when you QA them to death, they will pull out.

They'll still do the work, guarantee you they'll do the work because now they know they can't, in good faith, go out and not do the right work for their customers, but they'll do it outside the program.

So, build the program in a way that they can stay in the program, and make money, and be effective doing that.

And let's see, the last question I have is about the value of the building assessments to the homeowner and the contractor.

The whole building assessment is the roadmap. You can't do without the assessment. You can do without a lot of the over-the-top modeling. And if modeling is required, it needs to be calibrated to the energy utility bill so that people know, based on their usage, exactly what they can expect.

It needs to be a sales tool for the contractor, not just a burden or a hoop to jump through, but something they can actually rely on and give to their customer. And it needs to be something that they could potentially use as a guarantee.

I was in Arizona this week and I saw great big billboards, "Guarantee will address your comfort issues." They didn't say anything about the energy bill, but they're guaranteeing will fix your comfort problems. And that, I think, is what it all comes down to, giving people something to rely on, that guarantee that they need to go forward.

MS. COLLOPY: Great, thanks Tiger.

The next up is Kate Meis. Kate is an Associate Director at the Local Government Commission. Kate's work focuses on assisting local governments to reduce energy use and greenhouse gas emissions.

She leads the Statewide Energy Efficiency

Collaborative, LBC's Climate Change Program, and was the lead on behalf of the Energy Commission for the Statewide Energy Upgrade California contract.

Kate.

MS. MEIS: Thanks Christine. I'm going to dive right in, starting with question number three, which is the role of rebates.

We've talked this morning quite a bit already about the high up-front cost of participation and that's really made rebates instrumental in transforming the marketplace, especially given the economic times that this program rolled out in, the high cost of the -- especially the advance package, and also the lack of desirable low-interest loans has made it impossible to really start the program without, you know, high rebate packages.

So, I think the rebates offered by the utilities have been really instrumental in picking up some momentum in the program.

Additionally, in areas where local governments have been able to add additional rebates on top of the utilities rebates have seen a lot of increased traction.

L.A. County was able to offer, through their ARRA funds, an additional $4,000 rebate on top of the utility rebates. And over that time where they had the summer special saw a six-fold increase in projects. So, it really is able to move the market.

We also saw in the ABAG region the additional rebates they were able to offer meant that they ended up being over-subscribed by, I think, $1.6 million in their rebates. So, it makes a tremendous difference having those rebates.

And not just for the projects, but for the assessments as well. Tiger talked about the assessments being the roadmap. It's an entry point for homeowners, for building owners and so it's been important to be able to subsidize those as well.

Sonoma subsidized their rebates -- or excuse me, their assessments 80 percent and saw a high level of conversion rate on those people that took advantage of that offer.

Similarly, Santa Clara County also subsidized their assessments and saw a 45 percent conversion rate on those, so that's another key component.

Of course, we can't continue to fund rebates at this level, you know, $8,000 rebates for projects is not, you know, really the long-term solution. So, of course, financing is going to be a really key component of this as well.

And we've heard a lot today about the commitment from the CPUC, from -- we know local governments are innovating in this area as well, and that's really going to be a big piece of the long-term strategy.

We saw how desirable the CHF financing has been. L.A. County offered 2 percent loans and saw a two and a half percent -- or two and half times the amount of applications coming in when they were able to deliver that product.

Also, I think we're seeing innovations not just in financing and in rebates, but also looking at the way that the advanced and basic paths are set up. So, I know that L.A. County has seen a tremendous amount of uptake being able to offer the Flex Path.

So, there are different ways to think about how to make these upgrade structures more accessible to a larger group of people.

The other point I should make, before leaving the financing piece, is under the financing pilots through the statewide contract we've seen a big barrier is not being able to market.

So, some of those funds that are -- they're able to use for financing they can't use for marketing. So, financing is only effective when people know that that financing product is available.

So, segueing into marketing, just finishing up the financing piece, marketing for those products is going to be hugely important as well.

So, question number seven, marketing, education and outreach. As part of the statewide team, you know, I really think there's a strong infrastructure in place, thanks to groups like Ecology Action, who work really hard to do outreach, MIG on the marketing, the utilities, the local government programs.

I think, you know, we have a long ways to go, we've talked about some of the challenges, but we can do a little bit of patting on the back for all the hard work that's been put into place up until now.

I think we really do have a strong foundation that we can build on and we do have many programs already brought under one brand, which has really helped with consumer confusion and brand recognition.

That said, we know that we can really build on that and we have a long ways to go in terms of making that more comprehensive. We can do a lot more in terms of multi-family and commercial. There are other single-measure appliances that can be folded in.

Water and energy, that's been a big focus looking forward for 2013-2014 in the CPUC decision, so better ways to integrate that. Better ways to offer a fuller set of financing options and looking at behavioral change, as well.

So, again, I think we've seen a lot of work done. I liked the idea of the -- as Devon mentioned, of the hyper-local messaging. I think we've seen a lot of innovation at the local level in terms of how they're connecting with homeowners, how they're marketing the program using the statewide broader brand, but marketing it to the needs of their homeowners, and their constituents.

I think programs like Cooperative Marketing, that we've seen in L.A. and the Bay Area, where they're able to match funds with the contractors for marketing materials is one approach.

And I think we've heard a lot about the regional energy networks already this morning, and they're continuing with a lot of their -- hopefully, with a lot of their ARRA work in 2013-2014. I guess we'll find out more about that tomorrow.

But that represents a big opportunity to continue to innovate on the ground and I think the State can learn a lot in working with them on testing some different strategies.

Moving on to workforce development, again, I think there's been significant strides in workforce development thanks to, in large part, the hard work of really everybody in this room committing to this program.

But again, the work needs to continue, it needs to continue to be maintained, especially as we're seeing a lot of changes taking place, potentially, in this program.

So, as the program becomes more comprehensive and takes on different measures there's going to be a need for ongoing communication with the contracting community, with the real estate and lender community as well.

So, just to wrap up that piece, there's a lot of innovation that has been done, not just on certifying and preparing the workforce, but also supporting them in other ways.

Sonoma County's tool lending library is one example to help with some of the entry barriers.

They also have a $2 million line of credit. They heard for small contractors it's really difficult to float the cost of installations, so they're able to pay out those costs in between billing cycles using this revolving loan that they've set up.

So, just to wrap up, I think we have a really strong infrastructure in place. We need support to continue the statewide foundation that we have and we also need to continue to support innovative local programs that can really, at a small scale, test and drive some of the innovation and the evolution that this program needs. Thank you.

MS. COLLOPY: Thanks Kate.

Next up we have Siobhan Foley. Siobhan is the Director of Education and Outreach at the California Center for Sustainable Energy.

Siobhan provides strategic leadership to all facets of CCSE's education, outreach, marketing and communication initiatives in building performance, renewable and distributed energy generation, and clean transportation.

Siobhan.

MS. FOLEY: Thank you, Commissioner, and thank you to the staff for doing this. It's really kind of remarkable to look around and see all of you in this room. Everyone's here. And as many people -- you all have as much to say about this as we do, and we all have pages of notes.

So, I'm going to try to organize my thoughts a bit.

I was asked to really focus on questions one and seven, although I quickly want to echo what Kate was saying about the value of rebates for question three. I think at this time we very much need both rebates and financing in the market.

The early data, the PG&E study actually indicates that people in the target market very much respond to the idea of incentives and then, once people have actually done the program, they're very keen on comfort. But it doesn't translate as well to people who don't -- haven't done it, yet, they can't see or feel comfort. So, they can see and feel rebates now, and they certainly do want to save money.

So, I think those three messages, you know, you all know this, we all have talked about it, but it is very much about saving money, the time-sensitive nature of getting something to do it today and the comfort aspect, and those really all have to be in every message.

And I think to echo the workforce development discussion, it's absolutely critical that contractors really understand all of those messages equally.

We have a lot of -- not a lot, we have a few anecdotal moments of customers actually having to convince the contract that they did, in fact, need to do the program. Because the contractor said, well, your energy bills aren't high enough, you don't really needs this.

And they said, no, actually, my room is cold, I want this program.

So, that actually gets to number one which is who is, in fact, doing the program?

And the answer to that is it’s no one type of customer, right. I mean I think that’s another important thing.

And the other part of that, frankly, is I don’t actually, entirely know -- you know, there is -- the marketing has been very fractured and very local and that has benefits, but also it hasn’t been as data-driven as really it needs to be to get to scale.

We really need to be targeting the customers better.

We have been fortunate to work with SDG&E on doing some direct outreach, where SDG&E actually does mailers to their customers and is really targeting folks.

And we’ve done a lot of direct work, as well, with a whole neighborhood program we’re doing with Better Buildings, which is the DOE program.

And that hyper-local approach is good. We’ve run about 720 people through our neighborhood approach since the year started, but that’s resulted in 30 jobs. We’ve directly connected them, about 160 of them to contractors, and then 30 of them have actually completed upgrades.

That's good, it's tangible, it's not going to get us to scale.

So, we need that hyper-local to be supported by the transition to the umbrella brand of Energy Upgrade California, and a true integration.

This program is part of an idea, some strategy, it's not apart from it. It is one thing that consumers can do on a spectrum of things they can do. And there are certain consumers that this effort is exactly perfect for.

And those consumers that we are seeing doing the program tend to be -- you know, some segments that we're seeing come forward are retirees wanting comfort and certainty, higher income homeowners who have cash ready, green-leaning consumers who get sold on the benefits from that perspective.

Moderate income homeowners who get sold on the program by their contractor, so we're definitely seeing that there are certain contractors who get it, they've mined their databases, they're finding people and they're selling it to them, and those contractors have been successful.

And then family-focused homeowners targeted by programs or contractors with health messaging. The health messaging, you know, Santa Clara is working hard on trying to get some ability to claim health. I think that that is very, very important and gets to some of these non-energy benefits that need to be talked about.

But that is something that is actually going to move people off the couch and to really sort of do it.

And I've got so many more notes I'm never going to get to them all. I've got three minutes, though.

So, I talked about the demonstration houses. You know, I think, ultimately, let me just -- the scoping report is very -- very good in terms of the marketing, really talking about the segmentation and the work of doing segmentation to really target the right customers with the right message.

And then I think that key there is, of course, then training contractors in marketing and really helping them sell the value proposition.

Customers don't know why they want this. And it doesn't matter how passionate we are, they're just -- they're not on board. And we really do need to get them on board.

We are finding that word of mouth is very effective. And word of mouth was very effective with solar, it's very effective with most things and we really need to amplify that word of mouth.

And that gets to question seven, which is really about leveraging and coordinating with other programs.

So, the important thing, too, that I found that came out of the PG&E data is that the target audience, while they have a general sort of awareness of the term "Energy Upgrade California" and they know it's energy, and they think maybe it's rebates or environment, maybe a few of them think that, but they kind of don't really know what it's for.

And that's good for the transition because they know it's energy and we're about to blow it up and make it about a lot of things, and really make it about energy for them, whatever that really means for them and finding the right path for them.

So, that's an important opportunity.

But again, getting into lower cost incentives now, and comfort, and really driving those messages. So, the coordination opportunities really are in messaging and merchandizing. So, really having integrated offerings across the spectrum, from local government programs, community-based organizations, the utilities, of course, both the investor-owned utilities and public utilities who are offering these programs, really having a unified place where people can get this information.

There was a 2010 study done, of California consumers, and most of them get their energy information from what they called a non-governmental, non-utility website.

So, that’s a really big opportunity. It wasn’t most, it was like 40 percent or something. But that’s a huge opportunity for us to transition the Energy Upgrade California website and make it more user friendly, and really drive their self-directed, self-education process as we bring them along the path to being true energy managers for their energy-smart lifestyle.

And that is still a very important goal for us to reach scale.

And with my 19 seconds, the only other thing I would say is that there is a lot of opportunity, the Better Buildings Program, with the Department of Energy, you know, with the folks working on that throughout the State, have had a lot of opportunity to talk with other states and other programs.

And I always want to encourage us here because we have so much going on that we kind of get a little bit self-focused.

So, there are programs in other parts of the country that are doing some things very effectively.

Maine actually is using financing very well. And I don't know what they're doing that's working so well, but I think we should ask them.

And also, HVAC change-outs, as I understand it, are working fairly well in Arizona. And I don't know what they're doing, but we should ask them.

And I'll stop talking now, thank you.

MS. COLLOPY: Thanks Siobhan.

Next up is Joseph Oldham. And Joseph is currently the Sustainability Manager for the City of Fresno. Joseph manages the Home Energy Tune-up Program offered by Fresno Energy Watch Program, serving all of Fresno and Madera Counties, funded currently by PG&E and formerly by the Energy Commission's ARRA funding.

The Home Energy Tune-up Program offers no-cost HERS IIs, whole house rater analysis for homeowners interested in energy efficiency upgrades.

Joseph.

MR. OLDHAM: Thank you, Christine. I really appreciate the opportunity to be here today.

I'm going to dive in. My assigned or mapped questions are four, two and three. So, I'm going to start off with four.

Basically, we have seen the reactive opportunity where contractors or homeowners were calling up contractors that they've worked with for years to do tune-ups and whatnot on their facilities. And we've seen that having some impact in terms of getting whole house retrofits done using that mechanism, but it's been limited.

And I need to qualify something. Some of the -- my statements today are really related to the San Joaquin Valley, which is a unique area compared to other parts of the State.

One of the things that we have to all keep in mind as we roll out AB 758 is that this is one of the most -- in fact, it is the most diverse state in the union in terms of its climate zones and its demographics.

And so the programs that need to put in place at the State level need to take into account the regional differences.

The San Joaquin Valley is very different from the coast, it's very different from the Bay Area or Los Angeles, and we have whole different mindsets of homeowners and interest levels.

We have very high energy bills. Some of our homeowners pay over $2,000 in a single month during the summer for their cost for energy.

That also presents a challenge when you have rebate programs that are focused on percentage reductions in order to get the rebates. It's much harder to get 40 percent reduction when you're using 10,000 kilowatt hours a year versus 1,000 kilowatt hours a year. So, I just want to make that point.

So, what are the value of home assessments? We found them to be essential in order to get traction with retrofits in the Fresno and Madera County areas and, actually, the Southern San Joaquin Valley. It's necessary to go in and show the homeowner that they need the work done.

People get very complacent about their energy bills. They keep getting bills that go up and up, but they blame it on the utility's rate hikes and they don't realize that their houses are getting more and more inefficient.

So, our home assessment program, which we've done over 3,500 HERS and what we call a "lite" testing protocol, has been very, very successful and very well received. We've gotten to a point where we had almost 400 homeowners a month calling for this no-cost and free service.

So, it is absolutely essential to get the work done. We have roughly a 37 percent conversion rate on the assessments that we've done under this program in the last three years.

And, really, it leads to the question of whether rebates, number three, whether rebates or financing is probably the more critical.

Again, I'll point this to being a regional condition. In our region, rebates are far secondary to financing. Most of our homeowners want financing. They're upside down in their mortgages, they don't have equity in their homes to pull out funding to do deeper retrofits. So, having good financing available is essentially.

Also, the cost for the retrofit work, to get them really where they need to be, is somewhere north of $10,000, and as much as $40,000 on a typical home.

We found most of our homeowners that need this work are in our upper income demographic, with very large homes. We've tested homes as large as 8,000 square feet and as small as 700 square feet. But the majority of the homeowners that need the work in our communities are the folks that are living in the homes that are 2,000 square feet north.

And so that means that you're going to be spending quite a bit of money when you're replacing an HVAC unit, you're doing significant upgrades in the attic insulation, you may be doing additional retrofit work such as radiant barrier, other things that are necessary to combat the high heat in our valley.

So, I would just basically point out the fact that the rebates are very important; they are interesting for our homeowners. Energy Upgrade California was not particularly attractive and has not been particularly attractive in the San Joaquin Valley largely because of the high up-front capital cost and the requirement to do all of this work all at once.

Now, the whole house approach has been interesting. Many homeowners get the whole house approach in our community. What they don't like is the fact that they have to invest $30,000 all at one time to get that $4,000 rebate.

They would like to go about it in a more phased approach where they do the work, eventually ending up at whole house, but it may take them six months to get there. And by phasing it they can better make their finances match up and, ultimately, they will end up with a whole house retrofit.

So, what we've been interested in is looking at what the L.A. County model was of using the more or less -- oh, gosh, my brain's gone dead. Anyway, it's the Flex Path.

And where you can go in and do things in a more flexible approach and get the homeowners still -- at the end of the day they end up with a whole house approach, and they end up with their house where they want it to be.

So, with that I'm going to pretty much leave it. I think we've done a lot of good work down in the San Joaquin Valley. We've got a lot more to do.

PG&E estimates we've got 76,000 homes in the City of Fresno that need significant retrofit. And if we were doing 7,000 a year it would take us 10 years to do it. Those 76,000 homes are roughly one-third of our residential housing stock in the City of Fresno.

And we know that energy inefficiency is a stealthy thing, it comes on homeowners slowly. So, once we got that third done, then there would be another third to do. So, this is pretty much job security for home retrofit folks if they really want to engage in it.

And with that, I'm going to leave it and pass it off to Jeff.

MS. COLLOPY: Thanks Joseph.

Last on our panel is Jeff Gleeson. Jeff is currently Manager of PG&E's Customized Industrial and Finance Products Team, in the Customer Energy Solutions organization.

Jeff's team focuses on customized commercial and industrial retrofit solutions, retro-commissioning in commercial and residential new construction, and the energy efficiency financing portfolio.

Jeff was the Manager of PG&E's Whole House Upgrade Program when it was piloted in 2010-11. Jeff was a major contributor to the development and implementation of the Energy Upgrade California Program, and was PG&E's representative on the EUC Steering Committee, while manager of the PG&E's whole house program.

Jeff.

MR. GLEESON: Thanks Christine. So, it's great to be here, good to see everyone. Whoever says we don't interact face-to-face in the information age anymore is wrong, because this is basically my linked-in connections in one room.

So, a lot of good stuff has said already, I'll try not to repeat anything. I was assigned questions one, two and four, and I'm going to co-opt a little bit of three because, as Christine mentioned, financing is my area of focus.

So, a couple additional notes on question one about which customers are choosing no performance?

So, one thing that I think is very interesting is that a third of the participants, roughly a third, were recent homebuyers. So, don't ask me for the definition of recent, I actually don't know. I could dig it up, but I think that's interesting. So, we found one trigger point and we have done a good job of that. Whether or not that was us or the contractors I think is unclear. I would imagine the contractors are driving that, so well done to contractors in the room.

We've got a larger range of incomes than we anticipated. So, we conducted market research, a lot of people were involved in that early on, before we launched the program, and it said what all of us would have expected that it was going to be, the high income folks who would participate, and that has not been the case.

Fifty percent of the program so far heard about the program from their contractors. So, to echo everything that's been said, particularly from Tiger, we've got to make sure we treat the contractors well in the program, the processes, and all of that.

Second, then, 1.b I would call it, really getting to scale. So, the reactive marketplace, we've heard already today, is a key for us. We know that a lot of our top selling contractors are HVAC contractors. So, while some are saying, no, this is just too complicated and I'm just going to keep installing boxes, a lot of HVAC contractors have figured it out and incorporated it very well into their business models. So, I think that is great.

So, we need to talk more with those folks than we already do and figure out how we can help scale that.

And I think I'd like to echo what Joseph said, that is finding folks along their energy efficiency journey is a very good thing to do. And the right solution for where they are at the right time I think is something positive to keep in mind.

So, again, getting back to the reactive marketplace, particularly through the finance work that my team and many others in this room will be involved in, I think will be critical.

Another piece that's going to help us get to scale is the basic path, redesign all the different options that are now out there, trying to make sure we stay true to the energy efficiency loading order that we all hold so dearly to our hearts and at the same time, though, again helping folks find the solutions that are right for them, depending on where they are.

And I'll jump now to the value of building assessments. So, I think we're still working to educate homeowners on the value of the assessment. But I think it was Tiger, again, who said it really is the roadmap so you've got to have it. I think we should acknowledge the challenges in what we try to roll out in software.

I can speak for, I think, a lot of us in this room that early on we didn't anticipate some of the challenges we would have from software, but it's good that we're all recognizing that it wasn't as smooth as we thought it was. And so, you know, let's figure out what we can do to speed that up for folks.

For some it works great, for others it's not as helpful. But, regardless, the assessment is a critical component.

I think as you look to deeper retrofits it's going to be, again, particularly important to have that assessment.

And as I think about financing, I think the way in which we interact with the software tools, the ways in which we interact with our measure list is going to be very critical from an energy savings estimation perspective.

Let's see, I think I'll go -- I'm going to co-opt to number three, now, even though that wasn't assigned to me.

So, I'm particularly interested in a number of things. I'll step outside the residential space for just one second. On the financing program, which will continue for the IOUs, now back into residential, ARRA-originated financing programs that are continuing, which have shown great success already. And then the four new pilots that I think a number of folks here are well aware of, that we'll be rolling out next year, I think will offer some good insights.

But I think we need to be careful, back to the question about combination of incentives and rebates. We know that we have to have incentives right now, we now that we also have to have financing. We know that neither of them are a silver bullet. And we know that if we completed remove incentives starting January 1, 2013, then we will have missed the boat. So, avoiding unintended consequences there will be -- I think will be critical.

I think with that, most everything has been covered, so I will donate the rest of my time to folks in the audience.

I would just say that -- I won't mention any names, but I've seen a number of us at one-day panels -- or one-day meetings over the last couple of weeks. So at some point we need to go back and e-mail each other again because I was remarking over the weekend that I didn't have a lot of e-mails over the weekend. And now I know why, because we're all together here.

MS. COLLOPY: Thanks Jeff. So, now we're going to be moving to our question and comment period.

Dave, do we have a lot of cards?

MR. ASHUCKIAN: Right now it looks like we're going to have at least six.

MS. COLLOPY: Six. Okay, so we're going to start out with Commissioner McAllister, I understand you may have some questions?

COMMISSIONER MC ALLISTER: Yeah, I have a few questions and I'll be as quick as I can because I really want people to get their own -- you know, dig into our panelists as much as you like while they're up here.

But also, feel free to fill in the gaps with your own experience to sort of flesh out the topics that they talked about. If you think, you know, we're getting something wrong or you want to make sure there's a full story that gets in the record, then please do that.

So, I do have a few issues I want to just get a little bit more into. I guess I am really interested in this reactive marketplace and understanding what that really looks like.

Okay, so if you get a hot water heater that goes out and it's an emergency over the weekend, HVAC replacement, you know, the first hot day of summer, you know, oh, my gosh, my HVAC's not working what do I do?

How does a capable contractor leverage that into an educational experience that highlights building performance, you know, with the -- they're not going to be spending a ton of time, I imagine, with the homeowner, unless the homeowner really has the time to spend.

So, how do they target the message such that you really -- the homeowner comes away with an appreciation for what's needed, some possibility that they'll incorporate that into their long-term plan, even a punch list of what the top things are likely to be? What does that experience look like in practice?

And I'm asking because I want to sort of bring everybody along with this idea of how do we design the program so that it enables that?

MS. COLLOPY: Joseph, do you want to take that?

COMMISSIONER MC ALLISTER: Yeah, so I guess Devon and Joseph are probably the -- yeah.

MR. OLDHAM: Well, I'll step in first because we actually had a few scenarios like that, that occurred this past summer.

We had a few contractors that were using our Home Energy Tune-up Service as a vehicle, if you will, for helping them get to deeper retrofits.

And so when they would get calls from homeowners that they'd worked with historically, doing HVAC tune-up and whatnot, or the homeowner just valued them as a reliable contractor in the HVAC arena, when they would go in and talk to the homeowner, and have the first conversation they would tell the homeowner, they'd say, well, you know, the City of Fresno offers this no-cost, free home assessment program. We really think you should have this testing done.

We'll go in and go ahead and replace your HVAC unit because we know you have to get that going because it's 105 degrees outside during the day, but we think that this test will help you understand what other opportunities you might have.

And so we actually got a number of referrals from contractors that way. And then we went in and did the testing. We gave the homeowner then the complete the HERS evaluation of their home.

And in several cases it did lead to deeper retrofit work. And if nothing else, the homeowner then had the report.

Now, we have seen situations where the homeowners now have been leaving these reports for new homebuyers when the house then is turned around and sold, and then those reports have been informing the new buyer that work potentially could be done on the home, and then that homebuyer is moving down that path of getting additional retrofit work done.

So, it is providing some very interesting opportunities.

COMMISSIONER MC ALLISTER: Thank you. I guess tomorrow, at the Data Panel, I think some -- you know, there's sort of data for EMNV that we've talked about, and accessibility of data and stuff, but there's also the issue -- and I hesitate to mention it, but it's truly important, is Smart Meter data and how customer authorization of Smart Meter data might enable tools that enable them to really go in and -- you know, you could direct them towards that. Instead of sort of maybe throwing the full Monty assessment you could actually say, hey, you know, here's a quick and dirty you could do and it's very low entry, but could actually motivate action.

And I think sort of working that out and learning about those different models in the fairly near term could really accelerate the sales process, I think. You know, and I could be wrong. But I want to make sure that people are thinking about that so when they have comments they could say, oh, yeah, that would work for me as a contractor or whatever.

So, maybe Devon could chime in on this.

MR. HARTMAN: I think that's a really great idea that the Smart Meter data could be serving as a foundation for education and contextualize some of these issues that come up independently.

And I agree with Joe that the incidental or emergency sorts of occurrences in homes are ideally a trigger point for an assessment, maybe building on already an understanding in the homeowner's mind of what they've learned from Smart Energy data, from Smart Meter.

But what we're discovering in an educated population is that they've already been through -- let's say the homeowners have a water heater go out and they've already been through workshops where they have discussed the possibilities that for their particular home there may be different options. Maybe not the knee-jerk option that some people would have thought of, I'm going to just get an on-demand water heater.

Well, they know, having sat through workshops and been educated that maybe that's not the appropriate choice for them.

And so they're understanding that this particular event is an opportunity and a window into a larger set of opportunities for them, and they can actually get excited about participating in the process of discovery what -- what does the water heater lead to in terms of other greater energy savings and, potentially, efficiency?

We have homeowners calling us, saying that contractors are coming to their home, suggesting that they paint the outside of their home with an insulative paint for only $10,000.

And the homeowners are calling the organization, the volunteer organization and saying that doesn't seem to fit within the workshop, the education materials that you've been telling us. How does this work?

And so I think one of the things that we can do is hand out or make available to homeowners a list of questions around every sort of measure that they could be asking their contractors, who are coming in.

Because we find the homeowners can be, in this interim period, educating the contractors, as well as the contractors knowing and maybe being able to offer that same list. Here is the list that you might be asking us, if you were educated into how this hot water choice, system choice fits into your ultimate whole house energy upgrade down the road as you move forward.

COMMISSIONER MC ALLISTER: Thanks for that. And I guess it also brings up the workforce issue. The customer protection and workforce, right. We need to know that -- we need to make sure that these contractors that are, you know -- let's say we create a huge market and it happens relatively quickly. Well, we have experience in the State with programs that have seen, for whatever reason, you know, massive uptick in a short period of time and, you know, there's a lot of chaos that happens when that occurs.

So, I think we've learned a lot, as well, in the State in the last 20 years about this issue, and what can be done.

I mean the CSI, I think, is an example of using data and marketplace knowledge to design good policy. Not perfect, but we can, I think, really build on that experience.

I guess, so I have two more questions and then I'll open it up.

So, I'm wondering, probably Devon or Siobhan, you know, how many people who are doing upgrades are doing that with -- or if they're doing a comprehensive, how much of the -- how much of DG is happening? You know, solar, or whatever, alongside that efficiency, just do we have good data about that I guess is the question? So, just for now --

MS. FOLEY: Before addressing that, I just want to piggyback on the last comment. I think, again, you know, the roadmap idea that Joseph talked about is something that our team has talked about quite a bit, as well.

And not requiring everything to happen at once, I think that pressure that we've put on the market has really confused customers, and contractors, and us, and everyone.

COMMISSIONER MC ALLISTER: Well, and six months seems like -- you said six months, but that seems like a pretty short period. I mean I would imagine it could be years. You know, I've got this punch list and I'm saving my money and I'm going to do it over who knows how long. So, how we monitor that's another question but --

MS. FOLEY: Well, it is an opportunity. I think, again, just thinking about this program in the context, the holistic context of programs overall and, certainly on the IOU side, the emphasis on integrated demand-side management programs and really thinking about the customer lifecycle.

And then reinforcing, you know, that it's not all on the contractors. The contractors are one set of market actors in a complex market.

So, for those permits that are pulled, the city can send a follow-up letter to the customer, to the citizen, and say, you know, we see that you've had this done and do you know that this is one of many things you can do, and you can get an assessment.

I mean, there's all kinds of ways to reinforce that message. And I think that reinforcement of the message is really important sort of across the spectrum, and really working together to find all the different places to put that message point, all the different trigger points.

And points of kind of crisis, whether it be bigger community crisis, or home crisis like I have no heat, or hot water, et cetera, is an important one.

In terms of the integration with DG, we do have some sense, I think, anecdotally -- I, personally, do not have a good sort of metric for you, yes, X percent are doing DG, also. Someone else on the panel may have that.

We do know that the people are integrating it and that there is an interest. And I know that some folks on our research team are looking at the energy efficiency interests and ideas around people who have done the CSI program, and sort of thinking about what that relationship is because there are a lot of similarities in terms of how it's spanning across the market.

And in terms of getting to the deep retrofits, you know, again, it's going to be really important. The marketing is going to coincide so directly with the goal setting. So, if it really is that we need deep retrofits on a smaller segment, or less deep retrofits on a broader segment, or both, that's a different marketing challenge.

And so for those folks considering DG, I think you can really look at a smaller segment.

MR. HARTMAN: Yeah, I think it's a similar issue, too, in terms of education. A population in a community that is thoroughly educated on loading order, for example, are familiar with the terms "reduce them produce" and they are asking for reductions before they're asking for solar.

That being said, I think solar is so prevalent now and what we're discovering is that many, many people are asking about solar during the assessment interview.

And I think -- so, once again, it can come from the homeowner who's educated, who's asking, but they need to ask for it and be trained to ask for it in a certain order in that sense, or at least be familiar with that question.

And then, also, the contractors, once again, need to be educated. We're still run into homeowners who passionately want to be green and they have just upgraded their HVAC system to a 20 SEER box that was not connected at all to any kind of a ducting system. And they have brand-new solar panels on their house and zero insulation in their attic, after the HVAC and the solar panels were installed.

So, once again, I think the education around just basic building science loading order is an exciting subject. It takes a long time to unpack and we need to go really deeply into a community to help them understand that.

COMMISSIONER MC ALLISTER: So, I'm going to open it up and, hopefully, Tiger and Kate will have a chance to talk a little more, too.

MR. ASHUCKIAN: Okay, first up we have Mike Keesee with SMUD, and then Conrad Asper will be after Mike.

MR. KEESEE: Good morning. My name is Mike Keesee, I'm a Project Manager in SMUD's Research and Development Department.

As part of my work we sponsored a six-home deep energy retrofit demonstration project and my comments and questions revolve around that.

First, I'd like to second Mr. Berman's comments about the assessment process. I'm a firm believer that anybody who is a BPI certified contractor can walk a home in ten minutes and develop a scope of work.

I can do it and I'm not BPI certified, and that's just based on my own work.

I do that also based on my own experience of going through our program. It was a difficult painful process, even though I was a professional and I thought I used professional contractors and, well, things happen.

I want to suggest that we think of a back to the future type of approach to this. There's a huge market that was totally ignored by the Energy Upgrade California and our own program, that exists every day, that's in the tens of thousands of homes, many of which, I would say the vast majority of them needed work, and that's the resale market.

And I'm here to say that based on my research with the demonstration projects we did, I want to urge the Commission and the PUC to take a very hard look at the Energy Efficient Mortgage Program.

We heard from the panelists today that financing is key, we also heard that the markets are key, that intervention is key. All of this comes together during the resale process.

I like to think of it as the new new-construction program, if you will. It would provide the work that would keep contractors busy year round, and it would also transform the market because people would sort of figure it out. Hey, you know, I did this to my house, this is what it is and so forth.

So, all that said, and I could go on and on, is that, you know, one last thing I would also say is that our current utility programs are sort of a stumbling block, as well, because we encourage people to do widgets. And oftentimes the widgets are replaced with no thought about it.

Your contractors probably are still getting an SCE or SDG&E rebate for replacing a SEER whatever with a SEER 15 air conditioner at the same tonnage.

So, my question for the panelists is, you know, what role would you -- you know, don't hear it from me, I'm just up here doing my thing. But what role would you see the resale market in the Energy Efficient Mortgage as to helping us meet our big goals? Thanks.

MS. COLLOPY: Joseph, do you want to take that or Devon?

MR. OLDHAM: I'll take it first and then --

MS. COLLOPY: Okay, first stab.

MR. OLDHAM: Sure. We actually have seen quite a bit of interested in the EEMs in the Valley, particularly with the program that we've offered because we provided the HERS testing at no cost, so it's actually then there's no barrier for the buyer or the seller to have to deal with in terms of the cost for the HERS test as being, you know, any impediment for using an EEM.

And we've had several homes actually refinanced with EEMs and those home then kept from going into foreclosure. So, we're pretty proud of that fact and really interested in seeing what we can do to encourage that as we go forward.

The resale market is huge. The Valley has, as probably everybody in this room knows, we've had a huge foreclosure crisis in just about every community up and down the San Joaquin Valley, and there's still an awful lot of homes that are off the inventory, that the banks are just holding.

And these homes represent a tremendous opportunity for improvement if we could get them improved as they're being flipped.

We have a very active contractor in our community that has been doing a great job of this. We've been trying to encourage other contractors to pick up his model and do the same thing. We're starting to get some additional traction with some contractors in the area and we're hoping it will really catch on.

But most of it is down to the education. So, it's educating the homebuyer as to why they should want an energy upgrade on that home that they're buying versus granite countertops.

And so it's going to be kind of an ongoing process as we move through this. But the more and more of these homes that we get flipped with energy efficiency upgrades, and then the more that we do these assessments and then the home seller leaving behind the rating on this house, and the report, so that the new homebuyer can see what they're actually buying or being able to look at that report as they're going through the inspection process of the home I think is part of that education process that gets us down that path.

MS. COLLOPY: Devon, I think --

COMMISSIONER MC ALLISTER: Just, I'm sorry, Joseph, could you -- has the city considered doing a no-cost HERS at the time of sale or are you just sort of letting the marketplace evolve and do that as it may?

MR. OLDHAM: Well, I mean we offer this, basically, this no-cost HERS test now, whether it's at time of sale or, oftentimes, we get the new home buyers are calling us up. They've just moved into the house and they want the testing done because they've just purchased this home and they want to see what the home condition is.

Basically, I think the best thing would be is if the buyer and the seller could come to some agreement prior to the sale to have the testing done.

What we'd like to do is get the buyers interested in having their homes tested and then use that as a marketing tool to see their house.

So, we're working on it, but it is kind of a slow process to get kind of everyone educated into that.

COMMISSIONER MC ALLISTER: The reason I ask is that is one -- that is actually -- you know, we do have the authority to do things like that, as a Commission. But also, you know, want to make sure whatever we scope out and whatever we're going to put into that action plan, for example, is something that makes sense in the marketplace and that has buy-in from the various stakeholders.

So, you know, point of sale is something that people talk about a lot, but in practice, you know, it really needs a -- the devil's in the details. You know, and obviously there are a lot of stakeholders in that transaction --

MR. OLDHAM: Right.

COMMISSIONER MC ALLISTER: -- that have to be listened to and given a chance to have feedback -- or to have input. So, thanks.

MR. OLDHAM: I can tell you one thing, we've done a lot of outreach with the local appraisal industry and the local real estate industry and they are absolutely opposed to anything mandated.

However, in the last three years we have seen their viewpoints beginning to swing, that knowing how efficient this home is can be then a selling tool for them, and we're starting to see more of them much -- more of them interested in getting the testing done as a sales tool.

So, it could be a market-driven approach.

COMMISSIONER MC ALLISTER: Yeah, and I think that's really what we're aiming for is, you know, if the real estate industry, say, could tell us what would work for them, that would really enable policy to really be responsive to what the needs of the marketplace are, so that's obviously what we're looking for. So, thanks.

MS. COLLOPY: And I know we want Devon and then followed by Tiger.

MR. HARTMAN: Yeah, just really quickly. I agree that in the spirit of radical inclusion we need to in-franchise the realtors and the mortgage brokers.

And I agree with Joe that in the last three years I've seen a dramatic shift in interest from both the realtors and the mortgage brokers coming to us to figure out ways that they can be involved from I think a desire to differentiate and to increase the quality of their products. They're starting to see that they are adverse, however, to adding more paperwork, so they're very sensitive to that.

But I think the market is driving them to look for points of differentiation, and quality, and durability, yeah.

MS. ADOLF: I think it's really important to address the time of sale issue. And being a new homebuyer in California, I know what the value of that kind of pre-information could have meant to me. But it's not the pre-information that needs to be required on the seller's side, it's on the buyer's side to have access to that.

So, I was on a call, recently, with the Department of Energy, and with their Home Energy Score they are partnering with Inter NACHI to actually have the home inspectors, the great untouched -- in the spirit of radical inclusion, they're not here.

But the home inspectors to do a home energy score during their home inspection and provide kind of that preliminary walk-through assessment that Mike referred to, that they can do in a very short period of time. Non-diagnostic, but it gives the buyer kind of a guideline of what they might need to think about.

And then that home inspector flips the lead over to a contractor. When the buyer is ready to move forward, they've got a connection with a contractor that they can flip that to.

And if there was a structured flipping process, that would be a good thing to do here. And that gives the homeowner -- it hits them, the new homeowner, at that time when they are most likely to make an investment, which is about six months. They're going to spend between $8,000 and $20,000 in the first six months they own that home. And if the right lead is there from the home inspector, or somebody else, to tell them what they need to do, they'll make that investment in energy efficiency, as well as in countertops or paint.

MS. COLLOPY: Siobhan: I just want to add to this. We've had a lot of success in San Diego working with the real estate community and finance community. And I think this really speaks to the market segmentation and having the right message, and the right package for the right consumer, at the right time.

So, financing really needs to be an integrated part of the marketing. And when you're talking to new homebuyers, having certain types of financing that's available to them, specifically, I think is important.

And I briefly just want to follow up on the last -- I'm working a little slowly today, so I think of things later.

But one of the elements of data we have seen with solar customers is that those who have had audits, or what we refer to as audits, have had assessments of any kind of real nature were more likely to do energy efficiency in a significant way than those who have not.

And just kind of wondering about what the Commission's sort of full scope of opportunity would be. You know, one of the things that's come up with our team is a question of, well, what if you just required assessments whenever anybody did anything?

Right, so just putting it out there.

If you just had a situation where the consumer got an assessment when they did an HVAC change out, or got an assessment when they did solar, but there was this kind of longer term education of the customer over time.

Because, you know, not everybody has time to go to workshops. Like we love workshops, we do them all the time, but people don't have that kind of time to spend.

And so I think that having different ways to get the education out is important.

MR. GLEESON: So, one thing I'd add from a financing perspective, a couple of folks have mentioned today something that's right on, that you need to make sure that whatever we start working on here looks like stuff that the financial institutions have seen before, so they feel comfortable putting money into this marketplace.

The energy efficient mortgage and those products represent exactly that. So, the money we know for a fact is there, so as somebody mentioned earlier, it's sitting on the sidelines. That money is really sitting on the sidelines. And so it's a good piece to leverage and I would just add that.

MS. COLLOPY: All right, thanks Jeff.

Next, Conrad.

MR. ASPER: Thank you very much, Commissioner McAllister, for putting this on.

I think we have a lot of great minds in here and a lot of people working hard on this, and I know your leadership is going to be much appreciated. So, thank you from the contractor community.

I do want to read something before I ask my question, because I think it is important. I do talk with a lot of contractors and it's important to hear their voice in this, and I want to go, you know, back to how the -- this is an example, but I do hear it a lot.

How the process that some of us have had on our homes is very difficult and time consuming. So, I just want to make sure that this is understood.

Even though, you know, there are some -- as my colleague, Devon, said there are some successes and some development, we're still at only 5,000 homes and there hasn't been a huge uptake.

And I think the complication in the number of duplicate assessments, et cetera, I think should be really looked at and considered. And I think ever assessment matters as far as decreasing them as much as we can, if that makes sense.

So, this is from a contractor. "So, we had a referral client who was in contract for air sealing, duct replacement and attic insulation. The sales person tried to include a new furnace. For budgetary reasons, though, the client declined. The HERS whole house rating was performed on the test in to have a baseline HERS score on the house. We performed the combustion safety alongside of that, which was a plus. We entered into contract and completed our work. After the work was completed we had a HERS compliance rating performed for duct work. A few weeks later the client experienced trouble with the furnace and it was determined that they needed to replace it. Upon replacement of the new furnace we again had to perform another HERS compliance rating, this time including refrigeration as well. The AC unit that was in place failed the refrigeration charge and it was only a few years old. We then had to repair the unit and have another HERS compliance rating. Once the tests were completed we had an inspection by the local building department. The test in was part of a countywide incentive program that was providing hundred percent rebates to the homeowners for HERS whole house ratings."

These are what you've been talking about, I believe.

"To provide the improved score, a HERS whole house rating was performed on the test out. After several months we received notice that this home had been selected by PG&E to be tested for verification purposes. The PG&E gas service representative then tested the house again, doing combustion safety testing. Three weeks later we were notified by Build It Green, which is the implementer in this program, that they wanted to do a visit -- that they wanted to visit this home as part of their QA inspection.”

I know everybody’s kind of like, wow. But this is happening out there and we’ve really got to get a handle on this. I’ll get to that point.

So, anyway, this has been the eighth inspection of the home by a third party. The homeowner finished with people invading his home and said that he declined the final BIG verification.

Now, this is the contractor speaking again. “We worked hard to build confidence, sell the job and provide all the paperwork for the incentive program. We did a great job and the client was happy. Now, several months later, due to numerous visits, revisits and requests to perform redundant tests the client is unhappy with the whole process.”

Now, that kind of a testimonial is going to spread throughout the communities and that’s not going to help us or others agree to an upgrade project.

So, what I’m saying here is that there are a lot of problems in the system right now and I think this AB 758 is a great opportunity for us to really reassess where we are in this program and in what we really need to be doing compliance testing-wise, and QA-wise, et cetera.

And so I’ll wind that down. Actually, the contractors have put together a flow chart of before and now, and I did submit this to the Commission, and we'll put those into public record as well.

We do plan to be commenting quite a bit throughout this process. We've been patiently waiting for this process, sometimes not so patiently waiting for this process. But we're going to be heavily involved.

I know our friends at CAR are very concerned, as we are, about the cost of these audits. You keep saying a free assessment and that's a great idea, but the cost really comes into the billions of dollars when you do the math, if we were really to do assessments on all the homes up front, and it's a lot of money.

But my question to Tiger is, because she hasn't had an opportunity to speak enough, the -- let me get it. I know that BPI's expanding rapidly nationally. What new BPI standards should the Commission know about as they plan to discuss this action plan moving forward?

We've got our HERS in California that we've been doing, but I know that BPI also has a lot of good opportunities and a lot of good forward thinking ways to shape the market nationally, and I just want to make sure that we're really listening to those.

I think as a -- you know, as one way of doing things it makes a lot of sense if we're doing the BPI certification and we're going along the, you know, BPI accreditation and all those things we might want to also think about how BPI is addressing the quality assurance and all of those things as well.

And so I'm not -- I'm not trying to lead you into that, necessarily, but kind of things should the Commission be looking at?

MS. ADOLF: Okay. Well, I think that goes directly to the heart of what Bill said earlier about trying to align with BPI and BPI continuously evolving.

We have a very open and transparent process. And because we pull for our Standards Technical Committees, our Accreditation Management Board, our Certification Scheme Committees, our working groups for all of the standards from a very broad cross-section of the industry, all different kinds of stakeholders and players from all across the country that we generally have some foresight into what the industry needs are.

So, we are always working on developing new standards or updating old standards, and developing new certifications to address the needs of industry.

And some that we do have, that are pertinent right now, is the quality assurance standard, exactly how quality assurance is performed regardless of the standard of construction that's being inspected.

But something for the QA person to do that will align with that quality control inspector certification just came out of public comment.

We have an energy auditor standard that just came out for public comment in the last couple of days, so that's open and available for everybody. I'd encourage you to take a look at the website and comment on those.

Our BPI 20 400, which is the calibration standard for truing up the utility bills with the software, and making sure that you're addressing actual utility usage has just been approved as a BPI ANCI standard, so that's nationwide and final.

And the rest of the data standards, including data collection, data transfer under the HPXML protocol, and an energy upgrade labeling system are slated to be completed by the end of the year and ready for public comment.

So, those are some of the things that we have working on. Certainly, DOE's and NREL's home energy professional certifications are in pilot right now. DOE is subsidizing some certification exams for weatherization professionals who have been in the market, so that's out there and ready to rock and roll, if anybody wants to take advantage.

And on that particular point, I just want to emphasize that we have three community colleges in the Bay Area that are qualified to give some of those new home energy professional certifications. They're not a qualified weatherization training center, so they would like to pair up with somebody who is, perhaps the Stockton Center or whatever, to be able to offer some of those into the weatherization community.

MS. COLLOPY: All right, thanks Tiger.

MR. ASPER: Can I --

MS. COLLOPY: No, I'm sorry, we have other cards we must get to.

MR. ASPER: Okay.

MS. COLLOPY: The next card.

MR. ASHUCKIAN: Actually, we have Charlene Carlson, who's online. Charlene?

Oh, I'm sorry. She's from Santa Clara and she says, "We agree that educating homeowners about the benefits of residential energy efficiency apart from marketing Energy Upgrade California is absolutely the critical first step. In our experience, this education coming from local governments provides tremendous credibility, as does endorsement of EUC assessments. Rebates, 80 percent, got contractors into many doors and the assessment reports provided great consumer education and gave contractors the opportunity to market their work." Comment from Santa Clara County.

Next up we have Jennifer from the Association of Realtors.

MS. COLLOPY: And I just want to remind everybody there is a three-minute limit. And we are going to be approaching lunch. I'm catching us from the morning, so we will be breaking for lunch at the assigned time. So, please be considerate on your three-minute comments.

MS. SVEC: Jennifer Svec with the California Association of Realtors. First, we wanted to thank the Commissioner for allowing us to speak today.

We will be providing formal comments on this issue. However, I wanted to give some clarification on CAR's position on time of sale.

We do adamantly oppose time of sale as a use for energy efficiency retrofits on a mandated situation. The concern comes from creating transactional delays by requiring audits and retrofits during that time period. People are financially stretched, they can't generally afford to do a lot during that particular time period.

We'd also like to caution against time of sale because it's going to, unfortunately, not reach the low-hanging fruit, which is the pre-1970 housing.

Our research and economics department has estimated that you will only reach 34 percent of those homes needed to get those improvements for pre-78 by 2050.

So, we would seek to do retrofits and audits at other times in the home cycle. Thank you.

MS. COLLOPY: Thank you.

MR. ASHUCKIAN: And let's have David Cohen, followed by Steve Schmidt.

MR. COHEN: Hi, my name is David Cohen. I am from the Energy Coalition and we do a lot of details, a lot of details for L.A. County. We're the implementer for the Southern California Regional Energy Network Pilot that's been going on for the last year, and we're also the marketing and outreach for contractors and homeowners for Energy Upgrade for L.A. County.

And I kind of just had, basically, two comments to make. The first one is a little bit opposite of what I'm hearing from the contractor side, and from being the implementer, you know, trying to do the best for the public and get the most retrofits done for this program we feel that the contractors are not well-equipped to be able to sell -- to sell the upgrades.

We've spent a lot of time marketing the program and sending numerous leads to the participating contractors in the program, where we find a lot -- we get a lot of feedback that the lead falls flat from the contractor's side, where there's a perception of price gauging, that contractors are charging more money for these type of upgrades because of the onerous rebate process.

And then on top of it, we also are hearing a lot of selling against the program by contractors.

But that's not my main point. My main point is that I believe that BPI, alone, is not enough for contractors to be qualified to be a participating contractor in the program.

We think that perhaps they should go through more extensive training before they're given the green light, so that they're able to handle the demand once we spend the ratepayer or ARRA funds to help get it towards that.

You know, I think there's a delicate balance between being able to ramp up the amount of contractors that need to be able to do the jobs. But also, to build the credibility with the program, we also have to have those contractors taking good care of their customers and fulfilling the requirements of the program, getting the rebates properly.

And my second comment, and I have one minute left, is more just a program that we've been doing in L.A. County that's been very successful. It's not cost effective to finance or fund energy assessments for homeowners, especially in L.A. County where there's so many residents.

But what we've done is we've created an assessment voucher program, where we've created these $300 vouchers that we've given free to the contractors to use on the customers of their choice.

And as it's redeemed on an actual assessment, obviously, they're going to choose homeowners that are more likely to go through with the retrofit.

As they redeem it, we give them another one. If that project turns into an actual job, we give them a second one for that home. So, they can get two new vouchers for the price of one redemption.

And what that does is it leaves it as a selling tool for the contractors to use on the customers of their choice. We find it very successful and we hope to continue it in the future.

But I think that might be something that could be considered as a program design for you guys. Thank you.

MS. COLLOPY: Thanks David.

Is there somebody on the -- Siobhan, did I see you?

MS. FOLEY: Oh, I was just nodding because we also do that voucher, assessment voucher program. We saw it, we liked it and we also do it, and it does work very well, so I think it is an important note.

And also, there is a lot of frustration with driving leads. You know, I think a lot of the programs have taken the approach of connecting contractors to customers and driving leads, and have found that the contractors aren't ready for that.

And I would echo David's statement that, you know, I think a lot of us have said this, but marketing, sales, soft skills is very important and it is about the qualification. We've really focused on the technical aspects and at the expense of some of the others.

I know our team has been very focused on mentorship, as well, and just really making sure that there is a quality customer experience delivered.

But Conrad's testimony, I would say that we also just need a streamlined program design and make sure that that's happening, too.

MS. COLLOPY: Thank you. Devon?

MR. HARTMAN: Yeah, I'd like to say thank you, David, for those comments because I wholeheartedly agree. We find often in the contractor community, as well as the HVAC community that leadership oftentimes is leading the road, but the rank and file need tremendous education opportunities beyond BPI, beyond the most technical.

We have submitted for the record a pretty extensive list of suggestions around education and workforce development to that end because these soft skills are critical, yeah.

MS. COLLOPY: Great, thank you.

The next blue card?

MR. ASHUCKIAN: Steve. And then we'll have Barbara from CalCERTS after that.

MR. SCHMIDT: Hi, Steve Schmidt from High Energy Audits. I'll be brief because Commissioner McAllister kind of stole my thunder.

By background, I'm a software guy that's gone through the HERS training. So, I'll make three points.

One is that just about everybody on the panel has agreed or it seems like there's consensus that the assessments are critical to move a lot of people, as many people as possible through the Energy Upgrade California program.

The second one is that we've all heard a lot of agreement that the hurdle for doing those assessments is quite high right now as currently defined both for homeowners and for contractors.

Thirdly, I'll point out that Smart Meters are transformative. They enable us to do this type of initial assessment very, very cheaply, on the order of $10 per home and it's not intrusive. You don't have to send people inside the home.

We've had some great success with this down in the Bay Area, we've had 1,200 homes go through an online assessment using PG&E's Smart Meter data and it really works.

So, I encourage you all to attend the Data Panel tomorrow morning. I'll be at that one talking about what we've done in the residential sector. And a gentleman named Mike Kaplan will be there from Retroficiency. They've been doing the same sort of stuff for commercial buildings.

Thanks very much.

MS. COLLOPY: Great, thank you. The next blue card.

MR. ASHUCKIAN: Barbara?

MS. NERNESMAN: Thank you for the opportunity to talk and this panel is awesome. There's a lot of talent here and also in the room, so I want to second a few things that came up during the conversation here.

First of all, I really want to thank Tiger for bringing up the need for a standardized workforce.

ANCI - IREC has gone through a process of how can we build a national program from the installer to the QA. And so there are four national certifications, now, that have gone through the process of a pilot program and have been adopted, and they will be soon rolling out.

CalCERTS is one of the awardee people who can do these kind of training programs. I think that builds right into the certification process that Tiger's talking about. I think it's essential.

It's not essential right now for the existing workforce, except for those who are expanding their business and want to have a qualified workforce to call on.

There is a need for a workforce that needs to go all the way from the ground up, as we call it in the trades, the creepy crawlers who are underneath the houses and in the attics, they need to have the support and the talent behind them to be able to do their jobs effectively.

And that's part of our job is to make sure that we get that across.

And then we've got our crew leaders that are really important. These are the people who have already got some experience out there but can stand to gain from additional education.

When we talk about energy auditors, and we talk about the QA process, we all know there's vast improvement needed in the QA process.

So, what I want to do is say that CalCERTS is out here, it's gone through a rigorous and arduous process to become an ANSI-IREC approved training provider. And we're looking for people who are interested in this type of training to come forth, and talk with us, and partner up with us to be able to get this across the nation.

The other thing I wanted to say is the assessment. I am so proud of this panel that everybody's dropped the audit to the assessment. It took years for us to get there and I want to commend you on all of that because I think it really builds a consumer confidence and awareness when they're not feeling like the IRS is coming after them for an audit, they're actually coming in there to build a -- to do an assessment and help them be able to get the things that they need to have.

There is an essential need right now in workforce for cross-training. You've heard it from the panel, you've heard it from other people speaking here today.

The issue is we're looking at building science, but we're looking at building performance, so that includes our -- from long-standing home performance, the HERS industry. We're talking about green building. We're talking about solar. We're talking about the real estate.

If we're talking about getting building science across on a bigger value and for homeowners to feel confidence about this, we have to come together.

No more of this we did it here, and we've done it there, it's really important that we get across the cross-training. And I'd like to have people contact me about that, too. CalCERTS has got a lot of efforts going forward on this.

The other thing I would like to say is that -- what Devon was saying, and there is a public and private need for collaboration.

And I know that Kathy Vogel, from CPUC, Christine from CEC, and all of the CEC staff are all trying to do that. And I recommend that we all get on board as sole supporters of these efforts and see what we can come up with. Thank you.

MS. COLLOPY: All right, thanks Barbara.

So, we have five minutes before we're going to be breaking for a one-hour lunch, so I think that's probably one more blue card.

MR. ASHUCKIAN: Yeah, how about Cody Rudolph?

MR. RUDOLPH: Hi, thanks and thanks Commissioner McAllister.

I'm from Efficiency First. I just wanted to quickly address number three, the role of rebates and incentives, and rebates versus financing.

I think, you know, we can look quite a bit to the experience of the California Solar Initiative to help us, to help guide us as to how incentives can dramatically scale the energy efficiency market in the State.

And, you know, to me that's something a little bit different than just providing a subsidy to make it more affordable because people can't afford energy efficiency. It's really a tool that we use to scale the market, to achieve -- to increase market awareness and kind of get over that hump.

And I think that means a couple of things. One of the things it means is that we need to design -- is that, you know, if we look at the kind of numbers that we want to achieve, they just can't be sustained with the high levels of incentives that we offer right now.

And so we need to design programs -- it really impacts the way we design programs because we need to design those programs in ways that build the industry to survive, and to grow and thrive at those lower levels of incentives that we're going to need to put in place later on.

And so, you know, how do we do that? How do we train, how do we kind of train more contractors to adopt a whole house approach so that when they're going into the home they're looking for how can they maximize the value and the benefit to homeowners?

How do we educate more homeowners, do more retrofits right now so that more people are telling their friends and family about home performance, about getting energy retrofits?

And also, you know, in the kind of rebates versus financing debate, I think Jeff, to your point, how do we -- how do we structure programs so that we're providing the kind of data points that we need so that when we do get to that scale we're going to be able to provide the financing and lending folks the information that they need to help us?

So, I guess, I think that's pretty much it. Oh, the only thing that I'll mention is that, you know, I think there's -- so, there's a lot of talk about flex path and prescriptive programs, and I think one of the things we just need to keep in mind is right now we, of course, need to do a lot of work to scale up the number of retrofits that are going on, because it’s been a huge problem.

Long term we just need to keep in mind that if we’re -- we need to grow and transform the industry not just train and grow a set of companies that are only selling to rebates, when we don’t know how long those high levels of rebates are going to last for.

MS. COLLOPY: All right, thank you.

It looks like we’ve lost audio on the web. So, if any of you are getting e-mail or text from folks, let them know we’re trying to remedy that.

We’re going to be going for a one-hour break now for lunch. So, I’d like to thank our panelists, this was a really informative conversation we had today.

(Applause)

MS. COLLOPY: Thank you. Thank you so much. So, we’re going to break for a one-hour lunch and, literally, one hour.

There’s a few places to eat around here. If you head out to 7th Street you’ll hit a café, and if you head out to 11th you’ll hit a sandwich shot called La Bou, as well as a Mexican restaurant called Vallejo’s. They both will serve you within one hour.

(Off the record at 12:35 p.m.)

(Reconvene at 1:40 p.m.)

MR. ASHUCKIAN: We'll get started here in a minute, as soon as Commissioner McAllister comes back.

So, I'd ask you to take your seats, please.

Okay, thank you all for coming back promptly from lunch. We have, still, a very full afternoon agenda and we have a number of speakers who have wanted to ask questions, who haven't had a chance. So, I think the sooner we get started, the sooner we'll be able to try and make it through all these.

For the folks, I know there was five speakers who requested to comment during the first panel, but we didn't have a chance, I just want to remind folks that we are certainly welcoming written comments, as well as if there's time, we're going to try and get everybody an opportunity to speak during the day, as well.

So, with that, I don't know if Commissioner McAllister, would you like to have any starting comments?

I guess not, so let's just go right into it. Bill Pennington will be the moderator for this panel on residential ratings.

MR. PENNINGTON: Good afternoon, we're ready to get started here.

The purpose of this panel is to address the role and purpose of residential ratings, building rates, and where and how they're going to integrate into the model best, and issues related to that.

So, we have an hour and 45 minutes, which we just ate 15 of, or 10 of, I guess, seven, and seven panelists. So, we've got a full group here and it may be challenging to get done in the time allotted.

Six of the panelists are here and one panelist, Spencer Rosen, is on the WebEx, and when his time comes he'll be speaking by WebEx.

So, why don't we get going. We're going to make introductions to each panelist right before they speak. Each panelist will have seven minutes, as the previous panel had.

So, the first speaker is Conrad Asper, to my left. Conrad is the Executive Director of the California Building Performance Contractors Association, a nonprofit trade organization that advocates on behalf of home performance contractors.

CBPCA is the leading organization in California delivering integrated training and certification programs in comprehensive upgrade topics to contractors.

CBPCA also participates in the program implementation of the Energy Upgrade California

Programs. Conrad sits on the Energy Upgrade California Steering Committee.

So Conrad.

MR. ASPER: Well, thank you, Bill. And thank you, Commissioner McAllister. And thanks everyone for being here.

In order to address --

MR. PENNINGTON: Let's identify which questions you're doing.

MR. ASPER: Sure, question 10 and question 13.

MR. PENNINGTON: Okay.

MR. ASPER: I'll get to those. In order to address those two questions targeting -- targeted to me by the CEC, indeed the whole topic of the residential building ratings I want to provide a little context for the questions and the answers.

Indeed, in the 2000s there was excitement in the home performance contractor community about the promise of an asset rating system driving the home retrofit market, and the system potentially being regulated by the CEC in the form of HERS II.

Over the past ten years, with the actual piloting of the current modeling software available, as tested against actual energy usage, the technological advancement in metering data, Smart Meter technology that we heard a little bit about this morning, and we'll hear more about tomorrow, and the realities of the current California provider-ship system, the wiser minds have matured in the home performance contractor community.

Now, there are what I call outliers, who will promote the current HERS system and, of course, those in the provider-ships that are, you know, currently running these HERS programs would certainly want the system to continue its business as usual.

But what I want to state today is that we're really no longer able to afford to go down this very expensive path. And we have an opportunity here, with AB 758, to reassess and to do better for California.

Now, the questions that I was assigned, number 10, basically, when is an energy rating desirable? And number 13, what improvements -- or when a HERS program would be useful in the utility whole house program?

And my high level answer to those questions, in aggregate, are there's really very little to no value in the current HERS whole house energy rating to be embedded in the utility whole house program.

And that may sound a little bit loaded but it's -- we've seen that it has hindered the process of a smooth, frictionless approach to getting jobs done by contractors in the program.

We would like to keep the energy rating process separate from the energy upgrade sales and retrofit process.

And the participating contractors should, however, be required to pull permits for any HVAC change outs in the upgrade program. That's the law.

When we're talking about when ratings are desirable, the scoping report suggests that at the point of retrofit they're best to be considered, at the point of sale and at the point of finance.

And my short answer to these questions are, as I said, there's very little value in including a rating in the utility program unless it is a byproduct of the work and at little to no cost to the contractor or the homeowner.

And the current HERS system that we have is not providing that value to the contractors or the job flow process.

There's potential value in rating at the point of sale if it can be done in a cost-effective way.

And third, there is, I think, very little value in rating as a variable for securing finance.

So, with regard to the retrofit, the HERS system does not provide the value to the contractor in the jobs flow process.

And we've provided you, Commissioner McAllister, with a flow chart. I'm not going to get into that now. But we'll be submitting formal comments and this is really an overview today, and a beginning point of being able to talk about this.

So, we will have much more detailed discussions with the Commission in the future.

The reason there's little value -- and when I say value, I should make sure that folks are understanding what I'm saying, that the idea of value in my mind here is that value equals cost over quality or cost over accuracy.

And so that's kind of the measure that I'm using that word value on.

So, we see little value there and we've talked about that, at the beginning, that we've seen that the jobs processing that we've seen has been very slow. And the system that we have right now seems to be interfering with that jobs flow process.

For point of sale -- how much time do I have? For point of sale, for a rating or a label there could have some value, but not with the current whole house asset rating.

Instead, a much more cost-effective approach is needed. And my colleague, Steve Schmidt, tomorrow will talk about that.

Also, a very simple operational rating approach has been discussed among various contractors as an alternative to the asset rating.

And an operational rating that could be derived on existing data would be useful and doable at a very cost-effective way.

So, I think we've discussed before about the concerns over cost of the process in the audits, and we look at that as a -- similar to a tax that would significantly hurt the value of homes -- the value of homes in California in the housing market.

Now, when we're talking about, you know, is there a better system for asset ratings, I think one question that we do want to bring up and explore, have the Commissioners explore, would be to what level of granularity is useful for homeowners at the time of sale, of an existing home?

The DOE's come out with an energy score rating that is pretty simple to use and cost effective.

And I think research needs to be done on this question and we need to think about this, the increased granularity versus the cost, and the concerns over is there an increase in accuracy, really, with the increase in granularity.

And a lot of the studies that are coming out now, that we're seeing, on actual data over the last two years has said there's not a lot of accuracy there in what we're doing. And that's of concern with regard to the cost.

So, again, the more granular system -- is that my --

MR. PENNINGTON: Yeah, it was.

MR. ASPER: Oh, wow, I'm sorry. Okay.

MR. PENNINGTON: Just a few minutes, you have a couple of minutes to wrap up.

MR. ASPER: Do I? Okay. So, I think that question of granularity is really important. The concern over cost and the concern of accuracy, those are the main things that we'll want the Commission to be looking at over the next few weeks and months as we're discussing this.

And the contractors will be very involved in that process. So, I think in the sake of time I'll just close with that at this point.

MR. PENNINGTON: Okay, thank you, Conrad.

The next speaker is Jonathan Budner. Jonathan Budner manages energy efficiency programs for Southern California Edison. His department, which is the Whole

Building and Sustainability Department, covers a comprehensive mix of residential and commercial deep energy reduction programs, including Energy Upgrade California for existing residential; the California Advanced Homes Program for new residential; Sustainable Communities Program for master-planned communities; Savings by Design for new commercial; and Zero Net Energy.

Jonathan has represented Edison on the Energy Upgrade California Steering Committee for quite some time.

Jonathan.

MR. BUDNER: Thanks Bill, thanks Commissioner McAllister.

So, my questions are question 9 and question 12. Question 9 is "Under what conditions would it be appropriate to include a rating in an upgrade project?"

I think Conrad has touched on most of those. I will add I think it is sometimes useful to spark interest in home remodeling in sort of educating customers about the available options in their home.

And I would also add in a QA function to confirm the quality of the work completed by an upgrade project contractor. And I'll get into that a little bit more, later.

Obviously, one is needed for an EE mortgage as well. And I would just touch on, in passing, there already is a robust, very sophisticated, perhaps too sophisticated secondary market for mortgages in this country. And rather than setting up a new secondary finance market with trenches and complexity, it might make sense to better leverage the existing secondary finance market for EEMs and build on that existing infrastructure.

The threshold issue is not, to my mind, appropriateness, but utility. What value does a rating offer to a customer? And at this moment there's little demonstrated value to a rating for a customer.

Until HERS rating can demonstrating value to homeowners of the HERS rating, itself, of the rating, there will be little to no customer market for it outside of subsidies of some or another.

Is there -- Question 12 is, "Is there a role for HERS providers and HERS raters in the whole house program offered by utility providers or in financing offerings?"

All four IOUs have or will shortly have a HERS-rated path in their Energy Upgrade California program. HERS raters are allowed to submit paperwork on a lot of -- on behalf, rather, of contractors. They provide this

QC function for those contractors. They are sampled and tested at the same rates as contractors. But because they're better at modeling, because they're better at QC, because they have additional training the hypothesis is that they will be better at providing those services.

The contractors tell us again and again they didn't get into this market to work behind a desk. They don't really enjoy computer modeling and this program today has forced them to become experts in EnergyPro, which they really don't care to do. To the extent they can outsource that function to somebody else, or in-source it with a BBC, that's something they would prefer to do. And this is a model that allows them to follow that.

And if, to the extent that HERS raters can demonstrate consistently better performance than contractors participating in the program, they could be sampled at lower rates.

And we were discussing this at lunch, they could become something like in the residential new construction program, which is the other hat that I wear, the actual QC providers for EUC, much like HERS raters provider new construction quality control. And it's a cost borne by the project, rather than the utility.

I think that's a model that I would like to explore further, depending on the next year, 18 months of data we get on what the actual quality of the work is that HERS raters, through this path, are providing.

So, yeah, and also the other advantage is for new contractors to the program, they can jump in at a very, relatively speaking, low sampling rate because they'll be sort of under the aegis of one of these HERS raters. So, even if it's their first job, they could be sampled at very low rates rather than having to go through, in our case, the jobs at 100 percent QC until they can demonstrate their own track record of performance.

Okay. So, this would lower costs to the program. This would create a competitive market for quality control functions. This would improve QC bandwidth in the State and create a self-sustaining market for HERS raters in California, outside of the new construction industry which, we all know, has had struggles.

The IOUs or State supplied -- supported dollars cannot sustain HERS ratings indefinitely. They must demonstrate value to the financial market or to the IOUs in the form of this QC function, or POUs.

But I think the ratings, themselves, have to produce value for the homeowners, outside from their utility to -- to utilities.

A major EM and V effort needs to document the alignment between HERS ratings and actual savings.

A major research effort needs to document to banks lowered risks, default risks for highly efficient homes, as measured by HERS ratings.

I know there's some -- I know there's been discussion between REZNET and Fannie Mae to do this, but I have not yet heard the results of that. And I know they did a first, initial assessment that was kept private, but the word on the street is that was a positive correlation between lower default risk and better HERS scores.

The CEC should consider tying California to national HERS standards to facilitate national lending standards.

The CEC should freeze changes to HERS ratings, at least to a given benchmark. Because every time the CEC changes the HERS 100 to current code, it invalidates all the previous HERS ratings.

So, I would say make improvements as necessary, but peg it to one code and leave it there so you have an absolutely -- so you have HERS ratings that last more or less indefinitely. I mean, we could sunset it. But don't invalidate every time a new code comes out.

MR. PENNINGTON: Yeah, I think that's a misconception. The HERS ratings are pegged to the 2008 standards.

MR. BUDNER: Okay, good. Leave them there.

(Laughter)

MR. BUDNER: So, okay, we need to reach out to CAR, we need to reach out to the -- that is California Association of Realtors, and the Department of Consumer Affairs so that when they're licensing realtors, when they're licensing contractors, when they're licensing -- I think they license appraisal agents, as well, inspectors, that they're incorporating these energy efficiency elements into that as an expectation of quality service.

And, yeah, I would advocate for requiring EE disclosure as part of that inspection process.

So, HERS raters offer redundant QC without duplication of the IOUs and, thus, they don't eliminate the need for IOU QC or POU QC. It's more inconvenience, it's more cost and, again, they don't add a lot of value to the homeowners for the extra step across the threshold.

I think that's about it. I think HERS ratings are a really good tool, they have a great potential.

But to date I think they've been a good tool in search of a purpose. And I would like to identify ways to leverage the infrastructure that's been built to drive this market through -- through specifically finding real estate value in the value of a home that is for better HERS scores. And once that happens, homeowners will see the value in the value of their home when they have a HERS rating.

MR. PENNINGTON: Okay, thank you very much.

So, the next speaker is Jack Clark. Jack is the Building Performance Senior Manager at the California Center for Sustainable Energy.

Jack has worked with Federal, State and regional stakeholders to take comprehensive community action approaches to scaling the building performance industry in San Diego County.

Jack managed the ARRA Single-Family Whole House Upgrade Program and the Better Buildings Program for San Diego County.

Jack.

MR. CLARK: Thank you, Bill. Thank you, Commissioner McAllister. Thank you, Commissioner staff. Thank you to everyone in the room because they're working your tails off over the past several years on everything that we've discussed up to this point today.

Earlier I had asked Bill for some extra time, so I'm going to go through questions 9 through 13, I have 35 extra minutes. Hope you're all okay with that. Just kidding.

(Laughter)

MR. CLARK: Just kidding, I have seven minutes, so let me get right into it. I'm going to touch on question 9 and question 11, both fairly complicated questions so, thank you once again, Bill, for these.

Question number 9, let's start there. "Under what conditions would it be appropriate to include an energy rating in an upgrade project?"

And let me start by saying that I was a project manager for a building performance contracting firm, and a project manager, formerly, for a RESNET rating provider. So, when I'm talking about ratings in this context, I'm sort of -- I've got a foot on both sides of the line here and I think that helps give me some decent perspectives on the benefits of HERS ratings in this marketplace.

So, let me get right to it. As mentioned previously, I do think that there's a hole for HERS ratings as a QA/QC function. You know, we heard earlier today, and many of us in Energy Upgrade California for some time have heard that there are entirely too many touch points for homeowners, right. You've got program provider QA/QC. You have potential HERS rating verification for existing homes. You have, also, Title 24 verification. Potentially, you have the rating provider QA/QC. Then you also have, you know, potentially BPI's QA/QC.

And I think that a lot of these can really start coming together. I failed to mention building inspectors, as well.

I think they can all come together after the tail end of a completed project, potentially under one hat. Right, I don't think we're quite there, yet, so maybe we're talking two hats. But at least we've minimized that from four to five hats, okay, in the near term.

It's clear to me that on the advanced path, currently, our program providers are looking at really the same stuff any rater would look at in the field. It's the same modeling software, it's a different module, but it's not that challenging for them to go from one module to another and get a rating at the drop of the hat.

Bam, you've got a rating on a home that was just QA/QC'd, one touch in the field, by the provider, who goes out there with the contractor on the same day, at the same time, fairly simple.

As the IOU programs start to morph a little bit around the basic path, I think there's some new challenges there. It doesn't quite work or maybe we need to tweak that model a little bit, but I think there's great potential there on the back end of these projects.

Let's see, certainly, when we're talking about ratings under no circumstance do we want to interfere with the sales process of the contractors. That's really not what we're after.

And so, as mentioned earlier, many of the IOUs, if not all, soon will have a HERS rater path on the beginning of the project, which I think is fantastic.

Let the market have some flexibility in determining what's appropriate at the front end. All right, let's give some folks an opportunity build new businesses, new partnerships and let the market and the consumer base decide on what's appropriate, right.

What we've seen in the San Diego region, as a result of our AB 758 pilot and working with SDG&E is that we've opened up this HERS rater pathway, and these HERS raters are acting very often like mentors on modeling, and assessment, and data gathering with contractors new to this field.

So, I think that's entirely possible. I think what we'll see is new models and new coordination on the front end there.

I know that RESNET raters are doing this, now, on existing homes throughout the country with different contractors.

I'm going to start to speed up here a little bit, two minutes left, even though Bill was kind enough to give me extra time.

So, I think as we start to populate these ratings on the back end with the QA/QC, we can start to build the value around ratings, right. It's part of the program and we start to build that landscape, that pool of ratings and so we can continue that momentum there.

I've already touched on the front end.

The financing, I think, is another touch point for projects. I think that's an important piece to having the front end availability there for raters to participate before an actual project happens.

Because whether or not you're talking about EENs, or the MIST II program or any other financing program that's really looking at projected energy savings, you want that flexibility on the front end before the project actually happens.

And that could, you know, dovetail nicely with time of sale, or shortly thereafter. You know, we've worked quite a bit with the real estate community and certainly would like to work more.

So, I think, you know, after the time of sale, potentially, is a better time for upgrades because the home is already secured, we're not interfering in the sales process and you can start to work through that a little bit cleaner.

But there's another touch point there that I think we should be exploring on financing. The resale trigger, as mentioned earlier today, really comes back to what I just mentioned on the financing. You know, not mandated ratings at time of sale but, certainly, we want to promote ratings at time of sale that don't interfere.

I think the scoping report got it dead on there.

Number 11, I've got 27 seconds, here we go. All right, market barriers exist that limit the growth of the voluntary market for HERS ratings and assessments.

As I mentioned earlier, you know, the value of a rating is not clearly defined in the marketplace. We're working on that, now.

Current program procedures are focused on a direct contractor/homeowner relationship. I think that should continue. I think it's an important relationship. I think HERS raters can help that relationship along. And not necessarily with every contractor, but I do think there's a model for raters to get involved there.

So, if we can fold the rating into the normal back end verification of upgrades, we can start to standardize the process that benefits multiple needs across Title 24, AB 758, Energy Upgrade California, financing product projects and the like.

The last bit here, "Is there a role for ratepayers or a public funding to overcome these barriers? If so, what level is appropriate and commensurate to benefits?"

This is a good one, right. I mean we could spend quite a bit of time on this.

I would say yes, there is a role for ratepayer and public funding on ratings. And again, as mentioned earlier, this is really an education piece, right, this is an awareness piece.

So, if a contractor is going out there and doing the work and, you know, spending \$12,000 to \$30,000 worth of the homeowner's money to do a retrofit, let's put a rating on that building. Why not? Why not?

Right, then the homeowner goes out and compares that rating to their neighbor, and their neighbor's neighbor, and their neighbor's neighbor's neighbor. Right, there's no reason not to do that.

It's an educational piece. I think it broadens the awareness around not only this program, but other energy efficiency programs that the IOUs are offering as well.

Awareness is the name of the game and I think labels and the value there associated with labels, as documented in recent studies, is one that we really need to push on more so.

That's all I have, thank you.

MR. PENNINGTON: Yeah, very good. You were like 20 minutes earlier or something on that, amazing.

MR. CLARK: I tried, very efficient.

MR. PENNINGTON: Thanks Jack.

So, our next speaker is Russell Bayba. Russell supervises Build It Green's Technical Support Services to Participating Contractors and Raters, which are provided by Build It Green as the administrator of PG&E's Energy Upgrade California Program.

Russell is a HERS rater, a Green Point rater, and a BPI certification proctor. So, Russell, welcome.

MR. BAYBA: Hi, thank you very much. I have questions, let's see, 10 and 13.

Kind of what I want to point out is the

relationship I think with the homeowner and the contractor within the system. I want to focus on, you know, contractors and getting them the ability to upgrade a home, and as efficiently as possible.

I think there's a lot of barriers that we have in front of us to do that and to move a lot of projects through the system.

Each visit to a home is deemed -- is very necessary and we don't want to go more times than necessary to a home.

Each time we go, the homeowner is really going to reject the process. So, I think that's something that I found when we do QA and QC on these jobs, we go into a home -- or we call the homeowner, actually, and a lot of times they refuse to have us come in because they've had so many contacts with some building performance professional in some way.

That's something that we need to try to fight against. Each time we go out there it really affects the quality. And I guess a lot of times what the homeowner's going to then tell their neighbors, then their friends, and that's kind of what drives the whole business is that repeated customer or, you know, somebody who's making a recommendation to somebody else.

So, each time the homeowner has a contractor come in or a professional they need to -- here, I just lost my train of thought there. So, we need to, as EUC members, we need to stop having these repeated businesses come out there and look at jobs.

It's not uncommon, I think Conrad pointed this out that, you know, he had one that was eight jobs -- eight times that somebody came out there. It's not uncommon for us to see five times where somebody comes out to a job and tries to address the issues.

Going back and doing combustion safety over and over again is very frustrating for a homeowner. They ask why this has to be done so many times.

So, a HERS rater going out there really has to have value. Right now HERS raters, for the most part, don't have BPI certifications, they don't do combustion safety.

And this is another point where it's another contact has to be made because if they do a rating, somebody else has to come out, if they're going to get a rebate, and do the combustion safety and that's unfortunate.

The other problem with HERS raters is they're not developing a scope of work which will develop a comprehensive upgrade.

So, a scope of work is really something that's an important part of making an upgrade work and getting a job done.

Without that ability it just gets -- the cancer gets kicked down the road a little bit here and that's -- you know, we'd like to limit that as much as possible.

Part of the advantage to having a HERS rater is that they can do the modeling and sometimes they do it better than the contractor, sometimes not, it just depends. So, I think the inconsistency, it needs to be addressed a little bit.

And then going back to some of that, the HERS rater also has to promote the program and sometimes they're not always attentive to that. And something that I think needs to happen, they need to see value in the end product and they're disconnected from that end product sometimes because they're not actually going back and developing that scope of work and trying to sell the job.

However, I think that there are some of these HERS raters who can do it, and I think there's very few of them. The HERS BPC raters have that ability, but I believe there are very few of them. I have never met any of them. And I know they're out there and somebody else -- other people can maybe address that a little bit more. We need more of them if we're going to keep these rating systems, like HERS, in the marketplace.

I do believe that there is some value with the HERS ratings in giving us a benchmark. I think that there is some -- homeowners can use that benchmark to understand where they can go, possibly.

Let's see, and I also think that HERS rating, in a sense, can also be used at time of sale. So, I think there's some -- a great deal of value within that.

I also think that there's a possibility of a rating system that can use time of sale so that renovations and remodels can also trigger a HERS rating and a Title 24 report.

Let's see, so the other thing I think is important in pointing out, when we can actually have a rating in the home is when the cost of energy starts to rise for some people. We've already seen that. I think Joseph talked about that in the Central Valley, where the cost of energy is so high it really starts to impact the homeowners. And rating systems can work in that way. And I think the HERS rating systems could work that way, we would just like to see how it's going to manifest itself in actually showing the homeowners where the utility bills are going to drop and how much it's going to drop.

Right now we don't actually have that system in EnergyPro that works very well. We can't -- a contractor actually can't go out and explain that to the homeowner, you are going to reduce your energy bills by a certain amount, that's something that I think we need to incorporate.

And I think we're going to hear from Steve tomorrow more about that, and I think that's very important.

So, when a homeowner is trying to keep their house comfortable, they need to know where to go and what to do about that, and I think a HERS rating could possibly actually add to that understanding of where they can go with comfort, how to improve comfort and address where those areas are.

I kind of want to open things up a little bit so I'm going to move on and let other people speak, so thank you.

MR. PENNINGTON: Thank you very much.

So, our next speaker is Eric Beriault. Eric is the President of EnerGuy California. EnerGuy is a team of certified HERS raters and BPI building analysts.

Since late 2010 EnerGuy has performed over 10,000 HERS verifications. HERS I verifications, HERS II ratings, and BPI assessments all together there.

EnerGuy was started in Canada, in 2003, to participate in the Federal Eco Energy Program in Canada's Whole Home Retrofit Program, where they have labeled over 200,000 homes to date.

Eric.

MR. BERIAULT: Thanks Bill, thanks Commissioner.

So, I'm going to be answering question 12 and 11 today and I'm going to start with 12.

The short answer is -- my answer is yes.

(Laughter)

MR. BERIAULT: All right, lots of time left. Okay, so first I want to give you my definition of a HERS rater. So, I think HERS raters are independent, unbiased, third-party data collectors. Independent raters have no financial ties to a rating besides the cost of that particular rating.

So, in order for you to understand my point of view I'm going to tell you a little bit about how we operate in Canada, in that program.

So, it is called the Eco Energy Program. It's set up a little differently, it's third-party only for the test-in and the test-out, so we call it the pre- and the post-test, test-in and test-out, so it's third-party only.

Every house receives a pre- and a post-rating with their test-in and their test-out, so they get a score.

There's actually no -- believe or not there was no financing programs created for the homeowners by either the utilities or any form of government.

The rebates are paid by the federal government and some of the provinces will match the rebates. And there's actually an assessment rebate paid to the homeowner. It's $150 is what the assessment rebate was.

So, from 2006 to 2011 779,967 homes were rated, and so that's essentially, as well, a test-in. And 591,411 had retrofit work completed. So, it's 75.8 percent conversion rate from the test-in, the rating, to work.

So, in California we operate a little differently, obviously. We work under Energy Upgrade California in different markets, as well as the Home Performance Program here in Sacramento.

A third party is generally not required, ratings are not required. The financing programs are emerging, which is good. And, generally, the rebates are paid by the utilities.

And there are some utility-specific assessment rebates available, but it's not necessarily only for HERS raters, so it's kind of open to everyone.

So, we had to kind of rethink how we were going to do things to be able to provide value to our customers. And our customers are actually homeowners or contractors.

So, what we did is we made sure all our raters are certified for HERS I and HERS II, as well as they're all BPI building analysts.

In most cases we actually work as a subcontractor to the home performance contractor. We've had to provide a lot of administrative support for their sales staff to help understand the ins and outs in the programs in the different markets that we work.

So there's a bit of a misconception that adding a HERS rating to a whole home upgrade complicates the process. It doesn't necessarily have to be the case. It has been the case sometimes, often, but it doesn't have to be the case.

So, I believe our role as a HERS rater is actually to simplify the process.

So, I'll give you guys an example of that. When a retrofit is complete we're not done. There's potentially Title 24 verification if there was an HVAC change out and there was a permit pulled. We need to do the test-out to verify and to provide the results to the program administrator, letting them know what was actually done to the house.

And then there’s also combustion safety, which is a big component. And then if you’re doing an EEM or some other finance program sometimes there’s also a HERS II rating attached to that.

So, that’s four different touches. But all of this can actually be done in one visit. And we know this because we’ve done it 786 times in the last 12 months. One visit, we get rid of all of that.

So, I’ll move on to question 11. So, the barriers that exist -- you know, really, the main barrier that comes to mind all of the time is just the homeowner awareness. You know, what is a rating, how will it benefit them? They really just don’t even -- they don’t get it right now and they don’t even know, really, it exists. Most homeowners don’t even know it exists.

So, how do we change this? So in order to change it we’ve got to make sure that the ratings are done when it’s most beneficial for the homeowners. So, I think that’s during upgrades to their home and also when they’re looking to buy or sell a home to make that decision.

So, from our experience an assessment rebate was crucial in the first few years of the Eco Energy Program because no one knew what it was, no one knew what a rating was. They didn't understand it, why do I have to pay for this, I just want to get this work done.

So, as the program became more successful and well known, the homeowners in turn became more successful -- or more knowledgeable about the process and the benefits of the assessment or that rating.

So, the up-front costs of the assessment is rarely a barrier within a few years. It wasn't really a barrier because people knew they had to get it done, they knew they got the score, they knew what it was going to tell them and what it wasn't going to tell them.

So, like I said, you know, the rebate component was $150, it's about 50 percent the cost of a rating. So, again, we're doing ratings for about $300 to $350. And the reason it's less than it would be here is there's no duct blast requirement in Canada because you're not allowed to put duct work outside of the house.

And then, also, there's a very minimal combustion safety component, so the time was cut in half on what we had to spend in the home.

So, what's the role of the utility or the government to fund that? I don't know, I'm just telling you what the experience was. Is that, you know, $150 was great for a few years and if they pulled it away after a few years it didn't matter because everything was rolling and we had momentum.

And one important key that we found, though, is that by having the homeowner actually paying for a portion of that assessment they stayed bought into the process, and they actually looked at the piece of paper and they actually cared about it because they paid for it.

So, really, from my calculations from rough stats that I've had about, you know, training numbers for HERS raters and BPI building analysts in the State, we actually have enough people trained to get in every home by the end of the decade. So, we actually have those people, but they're probably not going to stick around and wait. That's what I think's going to happen.

Thanks.

MR. PENNINGTON: Okay, thank you very much, Eric.

So, our next speaker is Spencer Rosen. Spencer is participating by WebEx today.

MR. ROSEN: Yes.

MR. PENNINGTON: You're there. Okay, I'm going to introduce you, Spencer, if you're good.

MR. ROSEN: Okay, great. Is that loud and clear?

MR. PENNINGTON: Yeah, hang on just a second.

So, Spencer Rosen is the President and Founder of Energy Integrity, which offers homeowners energy assessments and partners with contractors participating in the San Diego Energy Upgrade program.

Spencer is a BPI-certified analyst and envelope professional, and a certified California whole house HERS rater.

Okay, now you can go.

MR. ROSEN: Okay, great. So, first off, thank you so much Bill, thank you Commissioner McAllister of the Commission, and the staff, and everybody who's here.

And just to expand on that bio, we're actually a -- we're in transition from a whole house energy rating and assessment company to a BPC. So, we're a general contractor and we're focused on whole house energy upgrades

So, Russell, now you've met, you know, -- I mean not in person, but over the phone. I hope that's, you know, valuable.

So, anyway, let's see, our questions are 11 and 13. So, first off, let's talk about barriers that exist. Okay, so what's in the way of a comprehensive home energy rating system being universal?

So, first off, the HERS rating doesn't mean anything to consumers. It doesn't mean anything. See, if you look at another system that's universal, miles per gallon, miles per gallon actually is relevant to people, right. The units, themselves, for the measurement are in the name of the rating, miles per gallon. And if somebody gets the miles per gallon number, they can do the math themselves and see how that impacts their finances, see how that impacts, you know, how far they can go on each gallon of gas.

See, a HERS rating is based -- it's great for comparison, but it's not a relevant piece of data for homeowners.

So, that's the first barrier that exists. It has to -- the rating has to communicate to people.

The second is, you know, at this point because it doesn't communicate real value, it doesn't provide real value except to access rebates and vouchers. So, it's a subsidized industry right now.

This thing with -- this is separate from assessments. You know, when I talk about HERS ratings, I'm not talking about assessments. The value of having someone in the home performing an assessment, performing tests on equipment, communicating and raising the awareness of consumers, that's -- that's a completely different conversation. But I'm talking about ratings themselves for right now.

The other major market barrier is that the HERS rating report, it's a very technical document. So, we have a report that people are -- you know, we're intending that people actually see value and it's highly technical. There are only a few data points in there that are really consumer friendly. That's a huge barrier for people to want -- you know, want a voluntary investment in HERS rating.

The other thing that is just, you know, from my perspective, is crazy about HERS ratings right now is we're saying that we're standing for performance-based programs. And yet, we're using energy models that combine a variety of components, individual systems, and run them through an algorithm to come up with the final number.

It would be like to evaluate the miles per gallon that they test the efficiency of the engine, the efficiency of the friction of the wheels, and combine them in some weird formula.

So, we have to have some way to measure, right, the performance of homes that's practical, that's usable, that actually accurately expresses the performance of the homes.

So, those are some of the barriers. Now, let's talk about, you know, whether -- you know, whether ratepayer funding is appropriate to overcome these barriers?

Well, absolutely. See, we can't manage what we don't measure, right. It's said over and over, but it really looks -- you know, if we're going to hit our goal and our targets of the State, and beyond, and really our State's leading the nation and the world in terms of energy efficiency on some levels, the current system, you know, it just doesn't -- you know, it's not accurate, it doesn't accurately measure that.

So, we need an accurate, clear way to measure the performance of homes.

So, investing in the development of this program, the further development, I want to step back real quick and create a little bit of context.

But there's nothing wrong with the current system. I'm not saying it's a bad system. It's actually perfect from where we've been. And, you know, to honor the work and the due diligence that have been done over the years by the Commission.

It's just given where we are and what we're seeing in the marketplace, there's just a lot missing in terms of communicating and assessment of the homeowners.

And I also want to distinguish the HERS I and BPI test.

So, HERS I and BPI test, I -- let me see how I want to do this. There we are. So, I assert that those are like compliance tests, those are essentially.

They're like for an automobile a smog test, or a craft survey test. So, those are essential. I'm just saying as a general performance-based rating for the house to use those individual tests just doesn't add up.

Okay, so what improvements could actually be made? Well, we have to create a rating system that measures performance.

And here's a few ways that could look. One example of a performance measurement would be how long does it take to bring a home from an outdoor temperature to, you know, say like 74 degrees. Right, we could have a range of different timing things and different outs for temperatures, turn on the system and see how long it takes. That's performance; that actually shows the performance.

See, so, you know, anyway, so that's one idea.

Another idea would be, you know, how many kilowatt hours does it take to keep the home at 72 degrees for the whole day when the -- and these temperatures are, you know, can just be created, when the peak temperature outside reads X. And you could have, you know, a chart that would extrapolate something like that.

You know, a value or a data point that would really make a difference for ratings would be something simple, something that's usable, something that's relevant. Something like kilowatt hour per square foot per year, right. So, what would that be, TKPS could be the relevant thing.

So, something that's translatable by homeowners and consumers.

And in terms of how it could be used with the current Whole House Energy Upgrade Program, it has to relate to and connect to the program. So, for the advanced path, if we still have an advanced path, the score would connect and relate to that.

So, say there's this much percentage of -- there's this much percentage of savings, then that would, you know, correspond to this percentage of incentives.

And the other thing that I think is critical for a home energy rating, and I see we're kind of at the end here, so I'm going to wrap this up, is to have some kind of certificate.

So, you know, a California energy upgraded home with a rating of X. Now, if we're staying with the current standard, it's a rating of 76, right.

But I kind of outlined some of the things about the program that don't work and what I see are really missing, so that HERS ratings could universally communicate to the industry and the marketplace.

You know, thank you so much for your time and your listening. I just think it's a great opportunity to continue to expand and develop the reach and breadth of these types of programs. And, yeah, thank you again.

MR. PENNINGTON: Thank you very much, Spencer. Please hang onto the phone. I'm sure there will be questions coming your way.

MR. ROSEN: I don't see the look on, okay, people's faces. So, I hope that all landed.

MR. PENNINGTON: Very good.

The next speaker is Rick Wylie. Rick and the Beutler Corporation have been heavily involved in residential Title 24 energy modeling and compliance since 1983.

In 2010, Beutler launched a BPI-accredited division called Advanced Comfort and Energy Systems, or ACES, and as contract partner with the CHF was instrumental in drafting and launching the ARRA MIST

Home Energy Retrofit Program -- Loan Program.

ACES performed over 300 comprehensive home energy retrofits financed through the MIST Program and is now beginning to perform retrofits under the new MIST II Program, called Green Star.

Rick.

MR. WYLIE: Thank you, Bill. I can sense that my comments are going to make a part of the room my friend and a part of the room my fierce enemies. So, we'll live with that risk.

Just a little bit on this whole topic about the ratings and the value of ratings. The CHF MIST program that we were a part of was the most complex and the most successful and scalable program of the ARRA programs in the State.

It had a HERS rating test-in, a HERS rating test-out, it provided cost-effectiveness validation for the consumer, including estimated energy savings that helped to make the decisions for the customer, helped them make a good decision.

We, as a company, went from zero to about 30 ratings per week. We closed about 40 percent of those rated homes until the financing was consumed.

One thing I'm hearing here is a lot of talk about the complexity of that process and one of the speakers just kind of focused on this a little bit. The time of the assessment elements are about 80 percent is spent on inspection, safety testing and construction details, the things you need to be able to put together a proposal for a customer.

Only about 20 percent of the time is actually involved in the rating process, the detail takeoffs for the areas and the input into the computer is really the simple part.

The other elements, things with the performance testing, like the duct blasting and shale blower.

Ratings bring credential and pride to a homeowner. And again, the cars, the miles per gallon is a great one. Imagine you've got an older car and somebody shows you how you can take that 13-miles-per gallon car up to 30. That makes you a pretty loud proponent and it makes a good decision.

I couldn't afford a new car, didn't want a new car, but look at my existing car perform.

So, with that kind of a little backdrop on the whole process here, my questions were 12 was the first one I was asked to focus on. And, absolutely, I believe that the HERS providers and raters should provide a critical role in whole house upgrade programs, and publicly supported finance programs.

I believe that all homes supported by these activities should have a HERS rater test-in and test-out for the reasons I just expressed.

HERS providers also must provide the continuing training and recruitment activities required to assure sufficient HERS raters are available.

HERS providers must continually invest in IT infrastructure that can streamline the capture and transfer of the substantial data involved in these transactions.

They also need to continue to work collaboratively with BPI, and CEC, and other agencies to meld these separate requirements.

By the way, our HERS rating process, we did the front end ourselves. The back end was third party, and that third-party guy was BPI certified. It only makes sense and it's certainly possible.

They also need to work with the Energy Commission, and EnergyPro, and other modeling tools that could be incorporated to add the capability to calibrate the results of the modeling to align with the actual energy. Everybody's talking about that, we definitely agree in calibration.

Question number nine, where should HERS II ratings be required? A lot of folks have talked about that, I'll go way on the other side of the spectrum. All new homes should be required to issue a HERS II rating upon completion and test-out by a HERS rater.

The new homes are built really well, they ought to have the rating on the home to be able to carry that forward. It should be on the property title.

For existing homes, we believe that HERS II ratings should be provided in the following situations: any time a permit for work is pulled on the home for any remodel, any major remodel, especially solar installs.

If the home has not had a documented HERS II rating within the last ten years and that it was built prior to 2002, if the home is owner occupied, that this HERS II rating is paid for or substantially subsidized by utility energy efficiency funds, or the HERS II rating is provided at no or minimal charge by home performance contractors that see these as opportunities to promote their business.

I'd like to touch on the other questions, briefly. Questions number 10, HERS II ratings should be performed at the time of property transfer. Assuming that some of the same type of points, the home will be owner occupied and that the home has not had a documented HERS II rating within the last ten years.

Question 11, market barriers, certainly process for attaching the HERS II ratings in a very visible way to the property title; it needs to be visible, it needs to be part of the ongoing process and over time that will bring a lot of value to these when people look at them when they're looking for their new home purchase.

Lack of enough HERS II raters and rating firms or home performance contracting firms, certainly for the volume we're talking about; the lack of encouragement or requirements to receive a rating, even within utility energy efficiency programs.

I do not understand that, when EnergyPro is being modeled to justify the energy rebates or the rebates for the program, not making that a requirement to go ahead and put the rating on it. It's a five-minute addition when you've already gone through that amount of work.

Obviously, awareness of the buyers for these ratings.

And the complexity of the modeling, it certainly can be improved. I'd certainly like to see more focus on things like the home energy score is maybe a simplified process. But, again, that's not where the bulk of our time is spent in a home.

Public funding support for encouraging these ratings include rating subsidies for key transaction areas, noted above, that can make the end cost affordable.

Development of and distribution of a list of home performance contracting firms by region, that are willing to perform audits at reduced or no cost. I think you'll be surprised how the contracting community can step up and provide these at very low cost.

Question 13, utility rebate programs should require HERS II ratings; we've already talked about that. The CEC needs to work with EnergyPro to develop the calibration mechanisms.

The bottom line, energy efficiency finance programs, with less rebates and more affordable financing has proven to work very well. We think the rebates could be down-scaled if there's better financing and that widespread use of and eventual demand for HERS ratings will drive the market uptake that the AB 758 envisions.

And we think that the overall audit costs will come down with practice and ongoing process improvements.

MR. PENNINGTON: Okay, very good.

So, we have unanimous consensus here on this panel, and so good job.

MR. ASHUCKIAN: Okay, we have about ten

questions so far and so --

MR. PENNINGTON: So, start with the Commissioner?

COMMISSIONER MC ALLISTER: Yes, I'll -- a few questions, again. So, let's see, when we're scheduled to end this at what time?

MR. PENNINGTON: The schedule has us until --

COMMISSIONER MC ALLISTER: 3:00 p.m.?

MR. PENNINGTON: 3:20.

COMMISSIONER MC ALLISTER: 3:20, there we go, great. No problem, 40 minutes. That's the fastest I've ever heard Jack talk, by the way.

So, lots of good stuff. Clearly, we have a lot to talk about and that's exactly why we're here. We don't have consensus on some of these issues.

I, myself, you know, and I think many staff, there's a lot of on-the-one-hand/on-the-other-hand going on. There are perfectly valid things to be talking about.

You know, on the one hand I could see, you know, there is some value in having a HERS rating, a number on the house.

On the other hand, you know, if the cost is X maybe we're better off trying to get that investment in actual installation and actual energy savings. We have limited resources and, you know, why -- so, how -- what data -- basically, whenever possible we want to be data driven. So, we want to have information about experiences that people have in the marketplace that show, oh, well, you know, we had much better take up if we included a HERS rating.

Or, you know, we had much better take off when we had fewer touches with the customer. That sort of real world data, real programs -- you know, I think the MIST Program was exemplary. It was targeting a specific market segment I think that, you know, had access to very attractive financing that was, you know, better than anything else out there and I think that was the big thing it had in its favor.

But any data that you have sort of about, okay, what close rates were, and things like that would be terrific to have.

And, really, all the testimony and presentations, you know, expanding on these key points and getting it into the record is obviously something we really want to encourage you to do.

So, I guess -- so, I'm on -- so just to drill into the HERS issue a little bit. You know, there's a lot of sort of eat your vegetables aspect to it. You know we want -- we sort of -- we have this program. If you want to participate in the program, then you've got to sort of do this and there's some up-front costs to it.

But on the other hand it has value and I want to sort of get folks' opinion on whether that value is more of a public policy kind of value, like is it -- is this more of kind of a public policy call that, hey, we want to understand our housing stock better, you know, have many ratings out there, and maybe that would drive us towards doing a sampling of program participants and, you know, actually finding non-customer funds to pay for these things, you know, as a subsidy.

On the other hand, maybe there are -- I'm hearing at least a couple of the participants mentioned that the facilitated model, with a HERS rater, is walking the customer through the process. Maybe the contractor it sounds like, it sounds like some folks are actually -- sort of contractors and HERS raters are getting together to sort of get the marketplace going together, which I have some questions about as well.

So, what is the value? So, two questions, is this more of a public policy kind of goal that can help the marketplace generally, or is there some large subset of the customers who find value in paying -- enough value that they're willing to pay for a HERS rating.

And I guess maybe two or three of you could speak to this, I don’t want to go all the way from end to end here. But maybe those of you who want to talk about it can step up.

MR. PENNINGTON: Who would like to respond?

COMMISSIONER MC ALLISTER: And I can probably rephrase that, if I have to.

MR. CLARK: Sure, why not. You know, I think it’s a combination of both. I think these ratings are -- right now they’re driven by public policy in large part.

But I think as we continue to build this value it’s going to help drive the actual retrofit market.

So, I think it’s a little too early to really determine, ultimately, the value here in California. I think we’ve heard some other examples in Canada, certainly, on what that looks like in a more mature market. I don’t think we’re quite there, yet.

COMMISSIONER MC ALLISTER: Well, let me follow up just a little bit because -- so right now, so if it’s project level, if we’re going to say there’s value -- if we’re going to assume or we’re going to presume that there’s value to an individual homeowner on this and, yet, we’re not calibrated to that individual homeowner’s energy bills, what should we be doing in the meantime?

Should we sort of forge ahead in the meantime or should we set it over here and sort of fix it, get it calibrated and then bring it back into the marketplace, or is there some middle path that's going to -- that's sort of workable from here on out as we start at point A?

So, it looks like Conrad wants to chime in there.

MR. ASPER: Well, I was just going to say I think by default we're going to end up with a middle path, depending on how things work with the utilities. It's called the prescriptive path, I guess, or flex path, or whatever you guys are calling it.

Yeah, to be named later.

But the contractors have been a little frustrated with the complexity of the modeling. There are definitely some raters that can help with that, if we decide to keep that complex modeling in the program.

And I'm not saying let's throw out modeling all together, but I think we're showing or we're going to see, now, in the program cycle of 2013-2014 that we're going to have this new path, and we're going to see if that becomes the path of choice.

And the -- it's, I think, a response to the system that we have now. I think there's a frustration with the modeling and there's a simplification opportunity here, and the utilities are going to jump on that.

So, we may buy ourselves some time to step back and really think about this a little bit, and AB 758 is an opportunity to do that. We are supposed to be, as it said in the actual reading, "determine for residential buildings the appropriateness of the HERS program to support the goals of the program" and what we're doing.

And so we can assess that. I don't think -- I think, and again we've been talking about this, there's the potential for a different kind of asset rating, like a home energy score.

There's the potential for some kind of an operational reading, potentially.

So, I mean I think we have time to step back and think about this. I think the worst thing we can do is just focus on what we have and say, okay, we're going to keep driving down this path. You know, there's enough folks involved in it, now, we're going to just focus on it, gain traction and, you know, we'll do a little more experimentation and we'll get there.

But I think the definition of insanity is doing the same thing you've been doing over and over, expecting different results. And I don't think we're seeing the results right now, from some of the feedback that we're getting from the ARRA funding, and programs that we saw funded by a lot of taxpayer money.

MR. ROSEN: Yes, Spencer Rosen here.

MR. PENNINGTON: Excuse me just a second. Spencer, I'm going to go to Rick Wylie and then to you.

MR. ROSEN: Okay, great.

MR. WYLIE: One of the things, you know, we are at Beutler is a predominantly heating and air conditioning company. And one of the things that came out of some of the hearings, the big energy efficiency goals and all was transforming of the HVAC industry.

And when I hear people talk about contractors, saying this is too complex, I say you know what, you're not going to make it. You're not going to make it. This industry is getting more complex.

Blower doors and duct blasters, a bunch of the guys don't want to do that. The ones that talk about the heating and air guys got into this and they got out, you know, we don't need them. We don't need them on the boat.

This is complex. And the rebates that are being offered -- and certainly it's a little bit of -- when you talk about policy or homeowner benefit, it's a little bit of both. The homeowner gets the benefit of a large subsidy in the form of a rebate and/or subsidized financing. The utilities and the State's saying, well, that's good, but then we need real qualification that this is a valuable upgrade.

So, we have to do a significant amount of modeling just to determine how much energy is this retrofit going to save?

When you've done that, you've already generated all the input you need to generate a rating. So, it's -- you know, we've stepped our way down such that if we're going to invest in these type of improvements, we're going to have to invest as an industry in better training, better qualified contractors.

We're going to have to invest in modeling the actual energy savings at an estimated stand point to be able to justify the rebates.

And the rating is really a nice gravy on top that leaves the homeowner with something that lasts for a long time.

COMMISSIONER MC ALLISTER: So, I can definitely see the rating as being a valuable -- you know, a nice byproduct, right.

But I think there are other -- just to keep pressing on this issue and, you know, I believe everything's that being said here. I'd just say let's say we really are in -- let's say we want to go to the middle income and lower income folks. Or say, you know, we really are under the gun, I don't know, just we talked a little bit earlier in the morning's panel about if there were big tracts that had similar housing characteristics, and we kind of knew what the top five were going to be all around, and could just get in there and slam it out and do, you know, a high volume of projects at a low cost, with a given number of measures to save a lot of energy would -- is that also a valid path and how does that interact?

You know, say that's done through sort of with BPI, you know, BPI contractors are going to get in there and you -- you know, you don't do a lot of modeling, but you follow a building performance path.

So, you know, how would you sort of look at those two things co-existing? You know, are those different segments of the marketplace or I think -- you know, I'm trying to get my head and help us get our collective head around these issues.

Like what does a robust marketplace look like? How are we going to get the numbers we need? And what kind of numbers will be talking about with sort of, you know, individually modeling each home versus some maybe higher volume, streamlined kind of approaches?

MR. PENNINGTON: So, Spencer, did you have comments that are relevant to that question?

MR. ROSEN: Yes, okay. Can you heard me okay?

MR. PENNINGTON: Yeah.

MR. ROSEN: Okay, great. So, the first thing, the value of the current assessment and model, and HERS II rating is extraordinary on the policy development side and the incentive side because now we have an opportunity to literally project and predict, right, and see how accurate the savings are to incentives.

So, it's been -- you know, that's very valuable data, especially if we can compare it and connect it utilities' data.

In terms of large-scale implementation, you know, utility usage data is our best tool. It's all right there. Right, in fact we can scale to a very -- you know, we can scale across the State and see the impact of upgrades, you know, accurately, in reality about usage.

So, I think that's a tool that is available and, you know, yes, there's all kinds of technical questions that can come up but, you know, that's another conversation. And I have a variety of ideas on how those technical kind of averages and normalcies based on, you know, things like occupancy can be derived.

But I think in terms of quick, easy, accurate, energy savings and energy measurement data, you know, the utility bill data and actual usage is one of our strongest tools for that.

And I also assert that, you know, some of what Mr. McAllister -- what Commissioner McAllister pointed to in terms of benches of homes, and specific measures if we use the ratings on the policy side we can see and with climate, right, which upgrades are going to be the most relevant and most impactful.

And then we can derive and create incentives based on those areas, and measure and monitor them based on more of a global, actual real world consumption, performance-based approach, which is what we're actually looking to see. We're looking to see results happen in reality.

So, I hope that kind of addressed your question, Commissioner.

COMMISSIONER MC ALLISTER: Yeah, thanks. Okay, we'll leave it there. I think you kind -- this is super different issues and it's kind of hard to tease them apart and unpack it. But I think, you know, we're going to have a good chance to do that.

So, yeah, Jonathan.

MR. BUDNER: Yeah, I just wanted to add that I absolutely think there's a public policy benefit to ratings. I think that until homeowners see a local benefit, a micro benefit the utilities and the State -- I mean, it's an opportunity cost for that marginal dollar you're spending on a rating versus some other benefit.

If we can find a way -- but we were proposing to, at the utility level, leverage the HERS raters as quality control providers.

COMMISSIONER MC ALLISTER: Uh-huh.

MR. BUDNER: Now, the cost of that HERS rating is not the six, seven hundred bucks to do the full assessment, but the $35 fee to send it to the registry and get the certificate back.

Homeowners are much more willing to roll the dice on 35 bucks, rather than 700.

COMMISSIONER MC ALLISTER: So, the rest of that would be paid by the utility program, or sort of the --

MR. BUDNER: It could be paid -- we need to have a QC function on that work, regardless.

COMMISSIONER MC ALLISTER: Yeah, absolutely.

MR. BUDNER: So, that's a cost, so it's which entity does it get paid to. And especially if you go to a HERS rater model, like the Res New Construction model, then that price is part of the job.

So, it's priced into the job either directly to the homeowner or through the contractor depending on the, you know, BPC model, but it's a cost that the utility has to bear so there's -- you know, there's more competition for that dollar and to drive down the cost of that inspection.

But that gets you from the macro to the micro. And then once homeowners start seeing the value of that HERS rating, then the entire market will start seeing the value of that HERS rating. But until then it's really hard to drive change just for cash, expensive, too.

COMMISSIONER MC ALLISTER: Okay, thanks. I want to open it up for other questions so, thank you.

MR. ASHUCKIAN: We have lots of questions and we'll start with Mike Bachand, CalCERTS, followed by George Nesbitt from CalCERTS -- CalHERS, sorry.

MR. BACHAND: Thank you. Thanks for having this grand gathering of people who were just together last week at the CPUC. Over half of this room was in San Francisco the other day. So, thank you all and I'll leave it at that.

I've synopsized our entire morning and afternoon on one page. That's pretty cool, huh?

I just wanted to make some comments and throw our two cents in, from our perspective.

One of the things that was talked about was training. Training is expensive. This was actually in the morning a little bit. But the uniformity of training is necessary to help support this in a way that people can rely on, the fact that everybody who's doing their job, the rater for instance, whether he's a BPC rater or a whole rater, is doing it essentially in the same way that can be relied upon by the industry to say, okay, if I hire this guy or if I hire this guy I'm getting essentially the same thing.

So, we promote accredited training programs that have gone through a process that would help the Commission, and the policymakers, and the consumers feel more comfortable about what a rater is and what a rater's capable of. Does he know all the job tasks and everything?

QA needs to be embraced by the workforce, I believe. They need to say to themselves okay, look, we can stand some checking and in order to do that we want to cooperate in getting QA access.

We heard the five touch point horror story. Okay, there's a few of those out there, that's true.

But, in essence, by putting the QA, and the rater, and the contractor together on a policy of, okay, we're going to do this, let's get the homeowner going, along the same line to understand what the process is going to be, that would help.

So, a little bit of homeowner education.

And also, early on in the EUC upgrade contractor rater meetings we were shown a scale by the contracting association that said it takes nine days to get through this process.

We were able to see how the BPC rater format cuts two days out of that nine days by the fact that they're there on the job.

Something else that happened, we've been working behind the scenes -- I'm not here to advertise CalCERTS, but I can't help myself. We will be requiring building analyst and building envelope, or at least combustion safety training for a whole house rater in our next cycle. That's going to be part of what a whole house rater is. There won't be a whole house rater without some acceptable form of that, or maybe whatever that combined form happens to be.

The distress to the homeowner and the contractor that's caused by multiple touches, and things, should really go away.

Jack, I'm not criticizing you, but you mentioned a line that you've been on both sides of. That line is what's keeping people apart. We need to make that line go away.

If you want to know the value of labeling of homes, you can please visit the CPUC website. Kevin Beck gave a great discussion about that at the meeting the other day. We'll put that PowerPoint on our page, too.

He quotes, "Not our services and data" -- he quotes the McKinsey Report which for some of you who are my age is not the same as a Kinsey Report.

(Laughter)

MR. BACHAND: Although it would be probably better read if it were. That's McKinsey, yeah.

Basically, part of the label value is this is upgrading your home. So, it begs the question if you were at a grade what was that grade, and what did you get up to? That's a measurement process and so it adds value to the label.

We have one of the largest contractors in the State of California, one of the largest rating firms in the State of California, who have both had success with a model basically as proposed in regulations right now.

There are some things that could be tweaked about maybe the building performance contractor model, just to maybe make it a little bit easier to use.

We also learned from ARRA that you can train a gazillion raters, but if they don't have a place to go with their little kit, it's not good. We need to help develop the market, first.

All this morning was about market transformation, market acceptance. And if the contractors were selling ratings, maybe similar to the model you were talking about, Jonathan, where they can compete for that rebate money, charge nothing for the rating and then get the $700 on the side -- I'm not trying to design a program here.

But, basically, if the contractor were selling ratings, they could compete on that level, also. And by selling, and by that person being the person selling the rating, then it comes together a lot better.

MR. PENNINGTON: you need to wrap up, Mike.

MR. BACHAND: Yes, I can. That is my wrap. Thank you.

MR. PENNINGTON: Thank you very much.

MR. NESBITT: George Nesbitt. And HERS raters are different than HERS providers, according to the regulations.

So, in 1999 the Energy Commission regulated HERS I raters separate from RESNET nationally. They included it in the Energy Code, required HERS verification.

Every code cycle we've increased the number of HERS measure credits, HERS required measures. Come 2014, you will not be able to get rid of an independent third-party HERS rater on any job involving ducts, change-out or new in the whole State.

In 2008, the Energy Commission adopted the HERS II rating system, as well as defined net zero energy homes in California. And I happened to certify the first new single family this past year.

The Energy Commission requires a brochure in every real estate, residential real estate transaction in this State be provided as a matter of disclosure.

Nationally, the energy efficient mortgage has been around since 1993. It requires a HERS rater.

Energy Star has required a HERS rater since 1996.

DOE Builders Challenge, which is now Challenge Home, requires a HERS rater, and Energy Star and both DOE require HERS scores.

Nationally, RESNET oversees raters. Boulder After Boulder is committing to rate 100 percent of their homes.

Jurisdiction after jurisdiction, State, city are accepting HERS ratings to show code compliance and requiring scores.

RESNET is pairing up HERS raters with contractors to do retrofits.

Around the world, Europe looked to RESNET to develop their required rating system. They didn’t look to California because we didn’t have one, yet.

We’re debating, we’re trying to create a second system, a system we already have.

In 1995 the Energy Commission was directed to have a rating system to come up and develop, you know, clear and consistent, and all this stuff. That didn’t happen for, what, 13 years, until 2008 and, unfortunately, has been a slow rollout.

I was trained by Charles at PG&E, in 2001, as a building performance contractor and was in an, actually, almost better whole house rebate program a decade ago, and I was also trained as a HERS II rater.

The Energy Commission is required to have a HERS rating system. It is required in some many places, it opens up so many options, it provides value.

But if we don’t support it, if we don’t implement it, we’re just tearing it down and we’re wasting a lot of time and money, and I’ve seen a decade lost. Thank you.

MR. PENNINGTON: Thanks George.

MR. ASHUCKIAN: Okay, next up we have Michael

Gabel, followed by Kathy Vogel.

MR. GABEL: Thanks. My name is Mike Gabel from Gabel Associates. Thank you, Commissioner McAllister for the opportunity.

I'll try to be brief. I'm going to try to present something a little outside the box. I second Mark Berman's comments this morning, and Mike Keesee's.

I think one of the goals of market transformation, to me, is to get the real estate industry voluntary market driven, real estate listings that include energy efficiency ratings, some kind of rating to improve value.

The only way to do that, and if you look at the Earth Advantage Institute Study from 2009, if you listen to the comments here, all of the stakeholders that I've talked to, homeowners and so forth say you need some kind of simpler rating than HERS II, say $300 or less that would be acceptable in the marketplace to do this.

Then the question comes up which system, and I don't want to get into that today. It could be home energy score, it could be HERS II Lite, it could be something else.

But it seems to me you need a simplified assessment as a first step to get some kind of rating that ends up in the multiple listings.

So, a homeowner, if I'm going to invest $10,000, whether it's through Energy Upgrade California, or some other system or incentive, I want to know that some of that money's going to appear as the appraised value of my home, as an automatic part of that process.

So then, really, the challenge for the Energy Commission is to say, and for CPUC to think how are we going to create this? Given the history of the HERS II, which we shouldn't abandon because it has a lot of value, but I think -- I really urge the Commission and the staff to think about a way to create a lower-cost appraisal that could be adopted by the industry and become automatic in the eyes of the homeowners and become adopted in that fashion. Thanks.

MR. PENNINGTON: Thank you, Mike.

MS. VOGEL: Good afternoon. So, my question follows well on the last one. I've been working on an energy program for a number of years, now, and somewhat distant from the rating question but, obviously, it's been raised in the context of the CPUC proceedings and the utility program.

And so the thing that has been raised today, for me, is a couple of suggestions. One is that there's a possible role for ratings as part of the upgrade program, either as part of a QA process or the new BVC pathway.

And I think Rick suggested a couple of other potential trigger points, financing, time of sale. Figuring out how to do time of sale that will be accepted by the real estate industry I think is still a challenge.

So, that's good, but the rate we're on right now with upgrade -- upgrade projects, as well as sales, home sales and financing, we're still talking about over the next eight years, let's say, or ten years a relatively small portion of the California market being touched by those trigger points.

So, my question is regarding, you know, we also have Smart Meters kind of reaching their second phase and we haven't talked about that so far.

We have Green Button Connect coming on in the next six months to a year and a half, or so, where both electric and I believe gas data will be available to be downloaded immediately by a contractor, with customer consent.

So, my questions is kind of twofold, one is can anyone comment on how the Green Button Connect might impact the rating market.

And, secondly, kind of related to the context I provided, might there be a value in sort of a two-tiered

California home rating system? One which involves in-home diagnostic audit component, duct tests, blaster test, very thoroughly, kind of semi-similar to what exists now, and another that much more streamlined and involves Green Button Connect and can either a very quick in-home, you know, entry of just 20 data points. Very quick, no more than an hour in the home or even, possibly, some of that handled remotely.

So, those are the two questions.

MR. PENNINGTON: Who would like to address that comment?

MR. ASPER: Just on the idea of I think what you're saying with the Green Button, you're talking about real data, and operational data, and I think having that as an option and opening that market up, and with the Smart Meter data, I think that's going to trigger a lot of innovation.

And again, if we focus on what we already have and try to make it just a little bit better, and just a little bit better, I'm worried about that path.

Whereas -- and I mean we can continue down a portion of that path, maybe with a HERS Lite, or what you're saying. But I absolutely think that, yeah, being able to get some operational data and provide, you know, real time information could be very valuable to homeowners.

Just really quickly, I was driving up here in my Prius, with some friends, and my -- my friend said, so what kind of mileage do you get?

And I said, well, look right there, it's 43.7. It says it right there, it's real time information.

And he said, no, I heard, actually, that you're supposed to get 50 miles per gallon on these.

I'm giving you an idea of what an asset rating versus an operational rating is. We're going to have an opportunity here to really have some real time data, and why are we not developing a system or at least stepping back and thinking about a system where we can take advantage of that and structure things to provide regulation for innovation towards that? That's all I have.

MR. CLARK: Yeah, I'd like to follow up on that.

MR. ROSEN: Spencer here.

MR. CLARK: Spencer, hold on one second.

I think you're exactly right and I think this comes back to Commissioner McAllister's question, how do we get this scalable, this rating system?

You know, we're all saying the same thing, we're looking for ratings, but what does that look like?

And perhaps you're onto it, where we're actually using operational data, while we're actually getting consumption level data on what's going on in the house or it's a hybrid approach where we can tie in the Green Button information and we can do some of that in-field verification with raters who are BPI certified, who are doing that QA/QC as part of programs.

And maybe there's that sweet spot right in the middle that could help us make this more cost-effective, and yet we're doing that two-tiered approach where we actually get in the field and verify some of these savings that we're projecting and we're capturing through actual consumption.

So, I think that's exactly where we need to be, I think that helps us scale it. And yet, we also have that in-the-field approach to verify what we're seeing through this operational set and this Green Button scenario.

COMMISSIONER MC ALLISTER: So, I'm going to make Spencer wait just a second actually, too, so hold on, Spencer.

You know, Kathy, thanks for that, that's really, really good. And we'll be talking, actually, quite a bit about this tomorrow in the data session, hopefully.

But I think you're exactly right. There's going to be a lot of data. You know, you have the customer confidentiality issues, you've got -- you know, you have some not insignificant barriers to get through to have that data accessible to have some sort of pre-analysis, or some automated analysis done such that a customer -- you know, with relatively short interval data you can tell a lot about a house without even going there.

And you're not going to really know that house until you do go there. But you can provide some sort of filtering, you can provide really key education and outreach, I would think, to the customer with some fairly straight forward, quick, cheap analysis.

And then once you've kind of got that in front of the customer then, you know, I'm hoping that in this whole AB 758 proceeding we'll figure out how to enable that sort of innovation that, you know, I certainly don't know what it will look like in detail.

But we have to sort of sow the ground so that it can happen. And then once you've got a serious customer, then the sky's the limit. They can call a HERS rater, they can get whatever contractor they want and they can push it forward and, hopefully, they can do that quickly over the kitchen table and get the project going.

So, I think the exact form, obviously, this is what we're here to try to figure out. But I'm encouraged that similar things are happening at both Commissions and we're trying to sort of get to the -- you know, not the right answer, but get to sort of the right schema to move forward with programmatically.

MR. WYLIE: Can I make a comment, Commissioner McAllister, on the actual energy use compared to the calculations?

You know, I'm excited about the Green Button concept. Giving us more information is always helpful.

I want to share a story, though, about one of the homes we did in the MIST program, where when we did an EnergyPro run on an older home, very old and in real bad shape. The EnergyPro calculated that the cost of heating and cooling that home, and its basic energy would have been $5,700 a year, very expensive home to operate.

The homeowner's actual bill was $1,800 a year. What do you think's going on in that home and what kind of data would that give you in making good assessments on, you know, trying to -- an asset rating versus an operational rating.

The next homebuyer might look at an operational rating and say, boy, this has got to be like a really wonderful home, I'm buying this sucker.

But the homeowner did not use air conditioning, they did not use heating, they suffered. So, that's the thing that you've got to recognize when you're only looking at that.

And a lot of the time we spend when we go to the home is duct blast, blower door testing, and then site inspection that helps you see those things. You can't get that from your Smart Meter.

MR. ROSEN: Hi, it's Spencer here, if I could just kind of address that.

So, the first thing I'm not saying eliminate the duct blaster test or the blower door test. What I look at those as is our baselines. It's like here's our minimum compliance for ducts. Here's a minimum compliance for, you know, building needs. You know, those are essential, critical.

But in terms of usage, it's just a brilliant question with the Green Button. You know, if we can basically say we're going to turn on the air conditioning for this hour and measure how much energy that air conditioning uses in reality, you know, that's a valid test. And it doesn't have to be based on, you know, occupancy usage.

See, why I'm proposing this and thinking about this is because when I seal a chase in an attic, it's the infiltrated heat, it's the inter-wall stability, there is no way that EnergyPro, or any other energy modeling software is going to be able to accurately express the difference that change makes.

So, I think that there's just some great questions, some great conversation, some great ideas about how this could be connected.

And there are ways to be responsible for occupancy and compliance.

MR. ASHUCKIAN: Okay, this session was scheduled to end at 3:20, it's about 3:19. We have quite a few cards. I'll let one more go and then we'll call it a panel.

If we could have Chris Cone come up, from the Climate Protection Campaign?

And I apologize for all the folks who submitted cards. Again, we encourage written comments.

MS. CONE: My lucky day. I'm very happy to be here and to be able to offer some thoughts, Commissioner McAllister and panel.

I'm from Sonoma County and in Sonoma County we have an MLS system called the Bay Area Real Estate Information System. It's the 23rd largest MLS in the United States.

It's also a leader because it has over 20 green features in its database and they've just added the capacity to add scores, energy scores to their database, as well.

And I talked to the director of the MLS and in the real estate industry, he told me, the scores are very important because they allow someone, who is a professional in the energy industry, to provide an assessment than then the real estate industry can leverage.

And the realtors really -- you know, it's not their role to become energy assessors and assign value to this.

So, that is a key benefit from a rating or labeling system that -- that we have the potential to shore could drive markets.

However, for the last three years I've been on the Board of the North Bay Chapter of Efficiency First California, and I meet with contractors regularly. And working out how to use the HERS system to advantage is something that needs to be addressed.

Some of the issues that regularly come up when we talk about this are when you bring a HERS rater in at the beginning, how does the customer know who is leading the project and who is their prime educator?

Several of our contractors have put a lot of time into trying to use the HERS raters and to capture the benefits of the rebate system for HERS ratings, and they were successful sometimes, and other times they had a hard time finding a rater whose report added value to the project and wasn't, in fact, sometimes in conflict with their own assessment.

And there are concerns about how accurate the rating results are and a disconnect -- if there are inaccuracies, how will the homeowners feel about that, if they're expecting one result because of a rating estimate and a different result comes across?

So, clearly, there are operational or in-field issues that everyone here is trying to work out.

On the other hand, making the value of that improvement to the property -- it's kind of hard to have somebody go up to your attic and see your R-50 insulation. And a rating is one way to make those -- that value visible. Thank you.

MR. PENNINGTON: Okay, thank you very much, Chris.

I want to thank the panel and let's give the panel a round of applause, please.

(Applause)

MR. PENNINGTON: Very good, thank you very much.

MR. ASHUCKIAN: So, let's be back here at 3:35. In our seats and ready to go at 3:35.

(Off the record at 3:23 p.m.)

(Reconvene at 3:35 p.m.)

MR. ASHUCKIAN: If we could have the last panel for the day start to get seated?

MS. EDEN: Good afternoon everybody and welcome to panel three, as my panelists are wandering in.

This is the third and final panel of the day. Thank you for sticking around. We're going to hope to get done by five o'clock and get everybody out of here on time.

I'm Devi Eden; I'm with the AB 758 team here at the Energy Commission.

And this is panel three, Energy Upgrades for Multi-Family/Low-Income.

And we thought it would be helpful just to say a few words about what's covered in this panel, what makes it different and special.

There are many dedicated people who have been involved in developing and delivering energy efficiency programs to the multi-family sector for many years, consultants, nonprofits, developers, program implementers, utilities and multi-family building owners.

We still have one missing so I'll talk a little slower.

This panel will address issues and barriers that impact delivery of efficiency improvement programs for low-income and affordable, as well as market rate renters, and address the issues of multi-family building owners as well.

The panelist have been asked to address questions 14 through 18, up on the screen, and through the lens of experiences in developing and delivering whole building energy programs to the multi-family sector.

Many barriers have yet to be addressed in implementing these upgrade programs and, ultimately, in developing AB 758 program.

I'm not going to read the questions, but just to summarize the key ones, there's a renter, building owner, and split incentive issues. There is streamlining and layer of low-income and market rate programs to achieve deeper energy savings, meet cost-effectiveness requirements, and also address the issues of energy savings attribution.

There are issues of conducting assessments or ratings, hopefully, at the earliest possible opportunity to optimize cost effectiveness, and provide opportunities for deeper energy upgrades and, at the same time, minimize impacts on tenants.

And as a reminder, quite often in the multi-family sector it's a consultant model that drives energy upgrade programs for the multi-family sector. That means that the energy consultants, not the contractors, tend to initiate and coordinate the energy programs and projects.

And, finally, there's finance and that includes incentives and rebates, and how to make those sustainable.

So, again, I'll briefly introduce each speaker. It will be followed by question and answer.

And just as a reminder for those that don't have a chance to address the podium, and including panelists, you're welcome to submit written comments. We're accepting them through October 23rd, at 4:00 p.m.

MR. ASHUCKIAN: Before we start with the first panelists, as folks are developing questions or comments, if you could just make a note on your blue card, if you have a comment that you think will be a quick, you know, maybe one minute or less, we're going to see if we can maybe try to get more folks to make their comment rather than, you know, having questions that require back and forth.

Again, just I want to have an opportunity to get more folks to be heard. So, if you can just make a notation on your blue card, if you have a short comment maybe you can just put comment, one minute, and that way we maybe will try and address more input from the audience. Thank you.

MS. EDEN: Wait for Karim or should we forge ahead?

So, first up is Ted Bardacke from Global Green. Ted is a Senior Associate in the Green Urbanism Program at Global Green USA. He works extensively with developers and owners of multi-family affordable housing on energy efficiency and green building projects.

He led Global Green’s work on the Energy Commission’s PIER-funded Zero Energy Affordable Housing Program, which led to the construction of the State’s first two zero net electricity affordable housing projects, both in the San Diego Region.

He’s also a member of the City of Los Angeles’s Green Retrofit Advisory Committee which directs the City’s $40 million retrofit of city buildings and workforce development

MR. BARDACKE: Thank you. Thank you, Devi. Thank you to all of those at the Commission who have been understanding that this sector, both multi-family buildings as a building type, but also affordable housing as a finance type requires a different approach, and a different execution than the owner-occupied, single-family market.

It wasn't always this way at the Commission. It's been ten -- it was a struggle ten years ago to make sure that we not only had an energy code that addressed multi-family buildings different, but that we started to have programs.

I wanted to recognize Bill Pennington here for being a vocal, and not so vocal sometimes, but definitely a behind-the-scenes supporter of understanding -- of this understanding. So thanks, Bill, for more than a decade of looking after this.

I wanted to start by saying that one difference in this sector is motivation. This is a motivated sector to improve their buildings.

A little bit, Devi, I think the -- it's actually not the consultant who initiates here, but it is actually the consumer or the building owner who's initiating in this realm. And so I think it takes us farther down the path towards creating good programs.

And some of the reasons for this is that we either -- in the affordable sector we have folks who are cash flow constrained because of restricted rents and long-term ownership.

And increasingly in the multi-family sector, on the market rate side, it's being dominated by REETS, who need -- have asset valuation as their main sort of driver of share price, not profit. They want long-term asset valuation increase. So, the Archstones of the world and the other folks who will be your major implementers down the road will also be motivated to do this.

The final group I think here are lots, and lots, and lots of small holders who are operating on very thin margins, particularly if they have low-income renters. Not necessarily income-restricted by statute or by financing program, but by the market that they serve.

And so I think we have some motivation here and we really need to tap into it.

Now, I've been assigned questions 16 and 17, so I'll immediately jump to those.

In question 16, about existing programs being meshed, there has been this continual problem of the affordable sector really qualifying people on the basis of AMI, area median income, where the other programs have had strict income limits that are not differentiated throughout the State, nor are they often differentiated by the Federal government and having to do with poverty levels and that kind of thing.

And I think it's unreasonable to think that the housing sector will move to the energy sector in the way they qualify people. I think we have to understand that the way of qualifying people in low income will stay with -- in low-income housing will stay with an AMI-base structure and we need to work on moving the energy world to that kind of harmonization.

I understand that there are DOE Federal poverty limits involved but that, I think, is the long-term goal, to have one measure of what is affordable or low income, and work towards the harmonization of moving energy folks to the housing world.

The other place where this is an issue is where we have a true mix of low-income people, however you define it, and people who receive no subsidy, who are paying market, and that market might be high, where we have a true income mix.

And I think Matt will talk a little bit about this.

But during the sort of waning days of the weatherization program there was a really good solution to this, which I think we could model, which is if a certain percentage of your tenants are low-income, you are a low-income building and you get access to those programs.

And you could do it sliding scale, you could do it in a variety of ways. But again, I think the minute we get into sort of the high accuracy is the enemy of the good here by trying to say, oh, that tenant's eligible for one thing, and that tenant is eligible for one thing, when we have a majority or two-thirds low-income, let's just fund that building as if it was low-income.

In terms of question 17, about split incentives, there is no silver bullet here, but maybe I have a few bronze bullets.

I think there needs to be more emphasis on central systems, if we go a measure-by-measure approach, because those are areas where the split incentive is not as strong.

There's a huge opportunity in common area lighting, particularly in parking lots and parking garages. The amount of lighting in an underground parking garage, that has to be on 24 hours a day, and is burning inefficient T-12s, is just phenomenal.

And that's a -- let's go in and do direct installs there. This is not a split incentive program, let's just treat them like a commercial building with some lighting.

I think another direct install place are master switches in the units. You know, if plug load is becoming more, and more, and more, and more, and more of an issue that is a low-cost, direct install kind of program that doesn't -- it doesn't solve split incentives, but it doesn't have split incentives.

And, finally, I think on the deep retrofit side, the deep energy retrofit side, I think one long-term, out there goal out to be working on eliminating air conditioning. Not just upgrading air conditioning units, but really working on envelope enhancements and ventilation enhancements to take those air conditioners out.

And what that does on the split incentive is it helps the tenants with lower energy bills, but it also helps these long-term owners because then they don't have to budget for maintenance and capital reserves to replace those air conditioners again down the road.

So, I think that should be a goal of the deep energy retrofits.

And I'll stop there, thank you.

MS. EDEN: Thank you, Ted.

Next up we have Nathan Bruner. Nathan is Program Manager for the Energy Upgrade California for San Diego Gas & Electric Company, SDG&E.

Nathan has successfully implemented the program by bringing SDG&E, the County of San Diego, California

Center for Sustainable Energy, and I'll add Heschong Mahone Group together for deeper implementation of the single-family and multi-family programs.

Nathan.

MR. BRUNER: Thanks, Devi. Again, Nathan Bruner, and thank you, Bill, Christine, Commissioner McAllister for having me here today, thanks for inviting me to sit on this panel and provide some input. And I say that most sincerely. Really, these seats up here are way more comfortable.

(Laughter)

MR. BRUNER: But, you know, I was asked if we could provide some input on our multi-family pilot that we ran here at SDG&E. It was a real partnership with ARRA-funded program. Heschong Mahone had an ARRA-funded program with the County of San Diego to reach out to multi-family building owners, provide multi-family building rater training, HERS II training, working with CalCERTS on improving EnergyPro for multi-family buildings.

And CCSE, who had their low- and mod-income ARRA-funded programs working with the City of San Diego.

And it was a real opportunity to collaborate and I would like to share with you, briefly, what that was. I see I have five and a half minutes to do so. And maybe provide some things that came out of that, that could be used in a more scalable program.

So, the pilot was small, it targeted a thousand units across building types. We were aiming for 20 percent whole building performance across the pilot.

It tended to reach out to both low and market rate, and a combination thereof, of buildings. Although the majority of those, due to the nature of the ARRA-funded programs that participated were low income.

It did utilize a single point of contact. Heschong Mahone served as a single point of contact for both building owners and raters participating in the program. And then there was third-party, independent QA/QC that was provided.

It did use a rater model a consultant model, so there were not participating contractors, as recommended by the statewide HERCC committee. Multi-family building owners are savvy enough to hire good contractors. They often have existing relationships with contractors that they trust, and the -- the participating rater can provide the QA/QC and the energy assessment for test-in and test-out that is necessary.

And in this case they also provided HERS II ratings for those buildings as part of the ARRA-funded part of these programs.

It did leverage rebates, so there were matching rebates in the City of San Diego and the City of Chula Vista, and it built off HMG's Savings by Design Program that they have run for multi-family for several years, in years past.

It wasn't exactly like it, but it did build off of some of those lessons.

So, HMG recruited building owners and raters, trained those raters, and then assisted those parties through the process.

And I think that one of the big things we learned was the single point of contact was really well received.

Building owners had confidence in the raters that they were spending an awful lot of money on for these buildings. Ratings for multi-family buildings and assessments carry a significant cost.

And I think there was a greater degree of comfort to go through that process with a neutral party kind of making recommendations, and would be over, kind of mentoring the rater, when necessary.

And I think raters felt more comfortable. There was a prerequisite to take the multi-family building rater training, some prior experience in training. So, these weren't kind of new folks off the street, they did have experience doing ratings in the past for single-family buildings and, in some cases, multi-family.

And having the independent QA helped, as well.

So, there was a prescreening process for building owners and our single point of contact may advise them that a whole building performance approach might be the best way for them to go, or they may recommend that they participate in other prescriptive programs for multi-family.

So, it was easy for owners and raters to understand who they were dealing with. They didn't have to guess, they had one single point of contact from the beginning until the end.

And our single point of contact could also advise them about financing opportunities and, as I said, assist them through the process.

Most of our projects that participated in the multi-family pilot were facilities that were undergoing major renovation already. It does seem to be a theme.

But we did get a good cross-section. We had a 200-unit high rise down to four -- a four-unit, garden style apartments, a good cross-section of buildings.

Owners like the ratings. They thought that it helped add value to the project that they were going to do. But like I said, they were already, in many cases, doing a major retrofit and this was a way for them to incorporate EE in a very comprehensive and deep way, sometimes, into their project and have confidence that the rating helped give it some validation as to what they were doing.

In some cases it involved significantly changing the scope of work that they might have otherwise been considering.

Some of the challenges, as we all know, multi-family is a diverse housing stock. It's hard to standardize a program when you have that situation, and customized programs are more expensive and less cost effective.

So, we're searching for that middle ground where we have standardized customization, right, where we find a way to fit everyone into some type of standards so that we can streamline the process and scale the program up, because it's very difficult to do scale when every project has to have so much customization.

Another issue was indoor air quality and combustion safety standards for multi-family. The standards around some of these issues are not as clear cut as they are for single-family and, in many cases, had to be dealt with on a project-by-project basis, which isn't the most streamlined way of going about it.

And this -- if I didn't mention, there was integration with this whole building performance with our low-income programs. So, to participate, before raters began the process of setting the baseline and developing a scope with the owner, they signed a property owner waiver to allow us to serve all the low-income customers who may reside in the buildings. That was the first step to participation.

And we wanted to make sure that low-income customers were fully served with this program before comprehensive building measures were taken. Many times the building measures may not have gone down to a unit level, such as appliances, that low-income may receive. So, we wanted to make sure those folks were fully served.

And building owners were okay with this as long as it was streamlined and didn't hold up their projects, they didn't -- they don't like delays on large, complex projects.

And it has gone well for the pilot and it remains to be seen how well it would be, you know, to be scaled up.

But there were some innovative ways, I think, with our low-income provider in terms of how to serve folks quickly in terms of enrolling, certifying them, and having the measures installed for low-income in a very streamlined way, so that the whole building projects could proceed.

You’re up.

MS. EDEN: Thank you, Nathan.

Next up we have Karim Bouris. Karim Bouris, he’s the Director of Economic Development with MAAC. MAAC is -- can you tell us, briefly, what MAAC stands for?

MR. BOURIS: Not only do I come late for my own panel, but I sent my information late, in her defense.

(Laughter)

MR. BOURIS: We’re a multi-service social agency down in San Diego, everything from affordable housing to workforce development programs, to early childhood education. We do a bunch of things.

MS. EDEN: MAAC stands for?

MR. BOURIS: It is not an acronym anymore.

MS. EDEN: It’s not. Okay, I’m sorry.

(Laughter)

MS. EDEN: Well, so what it is, it’s a San Diego, California-based nonprofit organization committing to promoting self-sufficiency among low-income families through advocacy, housing, social, workforce, and educational services.

Karim is responsible for developing and implementing programs that provide education, training and support to disadvantaged populations, including a Federally-funded Green Jobs Training Program, a Construction Job Training Program for Youth, and an initiative designed to support disadvantaged communities -- to support disadvantaged communities pursue careers in healthcare.

For the past 30 years MAAC has been running different entry-level retrofit programs for low- and moderate-income households through locally-, State-, and Federally-funded programs such as LIHIP, ESAP, MIDI and ARRA.

MR. BOURIS: Thank you. I was actually worried when they told me that they were going to pull my bio from Google, because who knows what kind of Karim Bouris are out there.

(Laughter)

MR. BOURIS: But joking aside, which is very dangerous when you give me a microphone and an audience.

I want to thank Commissioner McAllister for inviting MAAC to be represented on this forum. I think it's a -- we are at an interesting juncture for some folks in the audience, in the sense that we are not just a weatherization agency that's been a WAP for 25, 30 years.

But the angle I'm going to take today is that of not just a production side, but as well as the workforce development side of things, and the advocacy for low-income communities.

And so there's this sweet spot in the middle where I think the -- we really deal in the shades of gray.

So, I'm excited as well, and MAAC is very excited because poverty is not just a one-size-fits-all issue, especially if we put, now, energy efficiency in the context of broader economic development opportunities, this is a great opportunity.

In San Diego, one in six residents are in poverty. If you start expanding that to the low-income and moderate-income, you're talking about a huge driver of economic development here, at least in our communities, and I would venture to say across the State as well.

So, and just the final kind of framing question I think, you know, in some ways I can give you the conclusion of what I'm going to say, which is keep it simple, stupid.

Really, I mean at the end of the day when you're talking about what we do, it's a morass of complexity that we are trying to make sense of.

And I think the angle I'd like to take is that good public policy is not a democracy, it's a fascist regime.

So, I think Nathan hit on it when he basically called it standardized customization. That was just a much more political way of saying it, Nathan.

(Laughter)

MR. BOURIS: But again, joking aside, with limited resources I think low-income becomes a less attractive of the options, especially when we're looking at a measure of efficiency that is based on modeling on a home. The stock of a home is typically less attractive when you have a limited amount of money to do the work, and you have to get it done you're not going to go to the low-income stock.

One, on the amount of money you can spend on them and, two, on the kind of measures you get back. In some ways it's a disincentive to work with low-income communities.

So, there's two main questions that we've been asked to address, and they're 14 and 16, so I'll try to get to them in some pretty quick bullets.

So, low-income is not, again, one-size-fits-all, especially in the last five years, I would say. Poverty is being defined by people who are like you and me, so it's not poor people as in immigrants; it is not poor people who don't have skills. It is people who had great jobs, who can't find those jobs. It is educated people who know what they want, but yet our programs cater to them as if they're ignorant.

So, I think that's one of the framing pieces that I'd like to always mention about the low-income. It's not, you know, those people. So, it's us, it's people we know. It's our neighbors, it's our family members.

So, I think that as we approach our programs that the idea that we -- we approach it from the same way that we do our government programs, because there's really nothing better than a government, them coming across the room and saying, trust me, I'm with the government.

But educated people will try to say show me the proof, why?

And once we have, again, a whole spectrum of options of programs available to them, and we are not educated on how to cut through that chase, we lose our customers. It's a huge turnoff for people to try and make sense of it.

But then, again, if you're looking at the process it takes to do this work -- earlier today Russell mentioned it and I really appreciated that, when you're talking about an average four, five, six visits to get the work done even in basic, you know, weatherization work, and put yourself in the position of somebody who has a job, or two, and you have to take time off to let somebody in.

Those are the kinds of programs they have, they're disincentives for the contractors, they're disincentives for the folks who live in those communities, who benefit from it -- arguably, benefit from it.

So, these are the kinds of things I think that there are easy solutions for, if we approached it from the customer experience perspective and lenses.

So, I think that the other piece that's important, if we're looking at how addressing low-income consumers, is weatherization costs you nothing. The other programs cost you something.

So, on average when you do weatherization the savings on a household is about 300 and -- I think we estimated it's about $325 a year. It doesn't sound like much when you spend $325 over 12 months, except when you don't have money to do your laundry, then that is huge savings.

But then we go from this free program to retrofit programs that cost you in the thousands, even with the incentives. That's a huge leap for a low- or moderate-income consumer, who is wanting to do this.

So, I think that it's that kind of gradation that we need to start addressing in our different models.

And I like the pay for -- the different scalable approaches that Ted was mentioning.

So, on the consumer side there's those challenges. I think that on the contractor side there's, as well -- a lot of them -- it is no fun having to do eligibility criteria assessments, it's no fun having to figure out language barriers, financing systems, and explaining that to people who really just want a good service offered.

So, we spend a lot of time explaining as opposed to doing in this field.

So, the other piece that I would like to highlight in terms of the programs is around how we interact with them. There is a trust factor that is -- that should be counted.

And there's a model that was part of -- that we looked at doing, and we're doing in San Diego, which has an intermediary that is based on what social service agencies do well, which is we have trust, and that's the "promatora" [sic] kind of model.

There are agencies like Environmental Health Coalition, like Community Housing Works that are actually very involved in the lives of folks, and that provide a value added to them that understand the whole picture. That it's not just about savings on energy efficiency, it's about your budget, taking care of your kids, and paying things in addition to that. It's about quality of life.

So, contractors, I think, need -- would benefit from having that partnership well regulated and expected in the kinds of programs that we're talking about.

So, just real quick, now, on question 16, which is around multi-family, you know, I think that -- I can't -- I'm not going to run with the contractors out there in terms of trying to argue the pros and cons of the technicality and how it works.

I think that just looking at it from what works and trying to -- again, as a rule of thumb, repeat what words. Ted, again, you mentioned it really well. HUD programs that look at a whole multi-family, that say if 66 percent of them qualify, then just do the whole home.

Then you're cutting through having to do a ton of different assessments in a 200-unit high rise, and that makes sense.

On our end, when we do multi-family work, we're really talking about a scale of being able to crank out 15 to 20 assessments, versus three to four single family homes in a day.

I mean, that's economies of scale that you can gain.

So, I think it's repeating what works, it is trying to try and minimize the number of different programs and qualifying criteria, and trying to understand that we don't have enough money to go around, so we may as well just get the work done.

I know it sounds simple, but if we want to start asking the specifics, I think I would like the Q&A to get to that, mostly.

But again, we are an advocacy organization for poverty and rights of people. And I think as we're talking of energy efficiency, we're bordering on this question of a right that some folks are totally kept out of because we have income criteria that's coming in the way.

MS. EDEN: Thank you, Karim.

Our next speaker, panelist is Heather Larson from StopWaste.org in Alameda County. We're pleased Heather could join us today as she's recently back from maternity leave. Welcome back. Right into the fire.

Heather leads green building in Alameda County's technical assistance and grants to nonprofit housing programs.

She managed Energy Upgrade California multi-family deliverables for the ARRA-funded ABAG program and managed a partnership with the Energy Foundation to jointly fund development of the Green Point Rated Program for Multi-Family Existing Buildings, and is Chair of the USEPA's Multi-Family Home Energy Retrofit Coordinating Committee, known as HERCC.

And previously she managed the California Multi-Family New Homes Program sponsored by PG&E.

She holds a master of science in design science and sustainable design from the University of Sydney, Australia, and a BA in architecture from UC Berkeley.

MS. LARSON: Thanks Devi. Yeah, the qualification I'm most proud of is new mom to six-month-old baby right now.

But I'm actually going to address questions 15 and 17 today, and you can all read those yourselves up there while I make a couple of preface comments to my answers to these questions.

One, for those of you who are not entrenched in the multi-family program world, I'd like to remind everybody that there are actually a multitude of programs out there addressing the multi-owned sector, both between the investor-owned utilities, local governments and low-income housing programs there are over 50 programs out there throughout the State working in this sector.

And I would like to acknowledge the investor-owned utilities, as well as the PUC Energy Division staff for the strides that they have made to simplify that arena for multi-family program participants, because there's been a lot of work to try and kind of come up with new offerings.

So, there's been a lot of improvement and there's still, you know, a ways to go with that, but they've been investing a lot of time to improve the multi-family offerings.

And I also want to specifically remind people we use the terms "multi-family" and "low-income" as kind of blanket terms, but they're very specific definitions according to different programs, and to different sub-sectors in the multi-family housing.

But I think that for the most part when we talk about low-income and moderate-income tenants we're largely talking about the rental housing sector as a sub-sector of multi-family.

And for two specific reasons, one because rental housing constitutes the majority of multi-family housing out there.

So, in Alameda County, specifically, 40 percent of our housing stock is in multi-family buildings and 80 percent of that is rental housing.

So, when we talk about this as a blanket issue, we're talking largely about rental housing.

Also, rental housing by definition is lower income than ownership housing. And so when we -- you know, instead of getting into is it low income according to some definition or another, we're talking largely about rental housing, both market rate and low income.

So, with that I want to remind people that with rental housing it is the property owner at the end of the day who makes the decisions around what are the permanent and large scale improvements to a building on behalf of their tenants.

And so, low- to moderate-income tenants will benefit if multi-family programs are made attractive for property owners and managers to participate since they are, ultimately, the decision makers about these significant upgrades.

Also, multi-family owners, having worked with them both in the context of program implementation, as well as stakeholder input, they are concerned about the split incentive issue but, quite honestly, many of them will readily make end-unit upgrades even if the tenants receive the payback, if they have assistance and programs are attractive to them.

So, I'm going to talk specifically about some things that I think will improve the attractiveness of programs to multi-family property owners.

I think first and foremost for property owners is their ability to leverage incentive programs with other sources of construction funding. And this is important both from the property owner perspective, as well as a perspective of sort of sustainability of these programs moving forward.

In order to sort of enable layering of incentive programs with construction funding it really does take some technical assistance on behalf of the programs to sort of bring the incentives, the energy funding together with the non-energy funding.

And by non-energy funding I often mean, say, low-income housing funding that comes in the forms of low-income housing tax credits, housing and urban development funding, local government funding in the form of NOFAs, as well as funding that may come from, say, water agencies, waste agencies, et cetera.

Also, another key thing about being able to -- or property owners' interest to leverage construction funding is that the contractor selection is driven by large construction budgets, as opposed to incentive programs.

And in this regard I'd like to kind of echo something that Jonathan Budner said earlier about looking to new construction programs as a model. He said it in a different context, but for multi-family programs I think it's more appropriate to look to multi-family new construction programs as a model, as opposed to single-family rehab programs as a delivery model in terms of the way that we provide QA and provide options to property owners to hire their own contractors.

And also, I'd like to give as an example the Low-Income Housing Tax Credit Program, as well as the HUD Green Retrofit Program are both sources of construction funding for low-income housing. They've done a really good job of trying to align their new construction programs to utility incentives and other sources of funding out there. And so that it's a really complementary offering to property owners where they can layer those resources, and that's kind of where we need to get to in the rehab side.

So, apart from that, another key thing in terms of any kind of multi-family financing, I think it’s really important to acknowledge that any energy-specific lending product that’s offered to the multi-family housing sector should be coupled directly with a grant, a rebate with an upfront installment, or an equity contribution that is offered directly in conjunction with this lending product.

And the key issue related to this is that property owners are not typically interested or sometimes even able to take on additional debt to pay for energy improvements, if they don’t have additional equity invested to justify that debt.

And I’m not an economist, but that seems like a pretty basic principle. And it’s also not just that there’s a rebate out there and there’s a financing product out there, it’s really important that those are, you know, entirely consistent in the sense that the rebate really needs to provide some of the quality assurance, the data collection, the auditing, and the verification.

All of those components are really costly to administer, both on a program level and in terms of a developer’s sort of investment in that participation. And so it’s really important that that rebate process provide those functions for the financing product.

So, there's a lot of different reasons why it's really important that those two things are offered directly together.

Another thing that would be really helpful for overcoming the split incentive barrier, as well as enabling whole building programs is if property owners had automated access to aggregated anonymous energy consumption data at the whole building level.

And so this is something where, on the commercial side, AB 1103 has applied to commercial buildings to start providing ABS services. And I think that there's a similar interest for multi-family property owners to get access to information.

If you kind of think of a multi-family property owner trying to undertake upgrades for their building, on behalf of their tenants, it's difficult for them to get a picture of how a whole building is performing without access to their tenants' data.

And it doesn't need to be individual data, but aggregated on an anonymous basis for the whole building would be very useful.

And so, yeah, both AB 1103 in California, and I understand New York's sort of benchmarking initiative also classifies multi-family buildings as commercial, where there's been some progress in that area.

And for the general reasons where entities, either at the State level, or local governments are initiating benchmarking rating and disclosure policies could better work with the multi-family sector if this data were available.

And then, lastly, which I think I started out by saying that there's been a lot of work trying to streamline services to the multi-family sector, but this is something that is really key and important for property owners to be able to actually undertake upgrades.

There's a whole bunch of landscape of programs out there, and some other people on the panel, I think, might talk about this concept of a single point of contact, which the investor-owned utilities have talked about implementing in their multi-family programs.

But I think beyond that single point of contact it's important to have additional technical assistance to layer the IOU programs with non-energy programs.

And also, I think that something that should be addressed that's a little bit beyond the program level is really the way that these programs are either regulated or evaluated, and that the way that the savings goals are attributed to individual programs should be looked at, because I think it's very difficult for these individuals programs to work collectively or cooperatively in their program offerings if they're competing for savings against their programs.

So, that's it.

MS. EDEN: Thank you, Heather.

Okay, next is Matt Schwartz. Matt is President and CEO of California Housing Partnership Corporation, or CHPC and it's out of San Francisco.

He plays a leadership role in expanding the resources available to preserve and create affordable housing.

In 2010 CHPC helped to create a coalition of local organizations to help owners and residents of low-income rental housing better access Federal and State energy efficiency retrofit resources and achieve deeper energy savings.

CHPC is currently working with SoCal Gas and SoCal Edison on a pilot project to demonstrate an integrated approach of whole building upgrades of low-income multi-family housing using on-bill repayment finance.

Matt is also President of the Board of Housing California and is recognized as an expert on sustainable affordable rental housing policy in California and nationally.

MR. SCHWARTZ: Thanks very much, Devi. And just a quick clarification, I'm a past president. I wouldn't want anyone from Housing California to think I was claiming another office.

I want to just thank the Commission and Commissioner McAllister, in particular, for inviting me here today, and all the staff work that went on in preparing the scoping report, which I'm still reading through, but I've been very impressed in the quality of the information that's in there, and I really appreciate the work that's gone into that.

So, California Housing Partnership is currently working with over a hundred nonprofit and local government housing organizations. And the role we primarily play is in making sure that there's adequate financing, and the right combinations of financing to make the housing not only feasible in the first place, but sustainable over the long term.

So, over the years we've arranged the financing for more than 20,000 low-income apartments directly and we've contributed technical assistance and training to thousands, tens of thousands of more units.

So, we're coming, really, from the financing perspective and my remarks are going to be in that context.

I'm going to touch, briefly, on question 14 and then move to 16 and 17.

"What makes a multi-family dwelling, specifically larger multi-family buildings different and why should they be treated differently from single-family?"

For some people here that's an obvious question that doesn't really need a lot of answer, but I was asked to just touch on that.

So, I'm going to talk about three different qualities that I think particularly make them different, from my experience.

Multi-family buildings that we deal with are generally larger buildings with complex utility systems, where there's a -- the utility systems run between the private living space and the common areas. It's really difficult, in most cases, to try to separate the systems out. And this is one of the many reasons it's been difficult to serve multi-family buildings well with the prescriptive measures that were historically used for single-family homes.

On average a multi-family building goes through a substantial renovation -- this is one little issue I want to take with the report. The report mentioned that there's typically refinancing every 12 to 15 years of multi-family properties.

While that's often the case with low-income housing tax credit properties, historically, the money available for substantial rehabilitation has actually declined precipitously in the last two years, which I think many of you are aware of, with the elimination of redevelopment funds, and the exhaustion of the State housing bonds.

Even before that, I would say the typical cycle is more like every 15 to 20 years.

Now, we're going to be looking at rehabs, substantial rehabs every 20 to 30 years.

So, I think the point is we don't want to have to wait for a multi-family owner, like my colleague Ali Gaylord, who's going to speak next, to have to wait 25 or 30 years to improve the energy efficiency of BRIDGE Housing's buildings.

We need tools and best practices that will enable BRIDGE to move in the intermediate periods to adopt more energy efficiency practices.

And again, that's the context of some of my remarks.

So, in that in-between retrofit, the typical cost to the owner or the cost of the project is about $3,000 to $5,000 a unit in California.

And that cost, I was going to talk about, needs to be split up and dealt with appropriately.

We've had some discussion already of the split incentive problem and so just to frame that in the broad terms, in multi-family buildings of the type I'm discussing, tenants on average pay about half of the utilities and would reap about half of the utility benefits if there's savings.

So, it's a serious issue, the split incentive buildings when you're trying to -- as an owner, like BRIDGE Housing, is trying to figure out a way to finance these improvements to not have an ability to tap into roughly half the savings, on average.

Finally, this is a really critical point, and as someone who's worked in housing finance for over 20 years in this area, each one of the buildings we're talking about, particularly in the low-income, rent restricted, has on average at least a dozen lienholders, which is why the traditional approach of financing with deed of trusts, loans secured by deed of trusts on the property doesn't work in the energy efficiency sector.

Let me just frame this another way. If Ali needs to get a $200,000 loan to finance a retrofit on a 75-, 80-unit building that has a stack of financing that's $20 million to $40 million of value, she's going to have to get the permission of the investors, and lenders and public agencies that provided that financing.

It would take her weeks to do it, and a lot of staff time, and it generally will not be worth her while.

So, that's one reason that traditional loan programs, property-secured loan programs do not work in this sector.

Just a point of information, some of you may be familiar with the Bay Area Multi-Family Funds which, by my -- in my reckoning was the most ambitious, perhaps most successful, despite what I'm about to say, of the ARRA-funded multi-family programs on a large scale.

They commissioned 54 energy audits for prime candidates for multi-family retrofits, low-income buildings in the Bay Area.

In the end they had four property owners, with six properties, who were willing to proceed with these heavily subsidized loans, where the audits were already paid for by other parties.

The two biggest factors in nonparticipation by owners, like Ali, were this multiple -- the brain damage from trying to deal with permissions, from a stack of existing lienholders. And, two, being asked to shoulder the risk of the energy savings, the energy savings actually materializing when the benefit was only going to be half coming to the owner, without any real guarantees or any performance data to back up the likelihood that that would occur.

So, what are some essential elements of a successful retrofit program?

Heather just made this point, but I want to say it in my own way. For this sector you can't just have debt, and you can't just have grants, or equity, you've actually got to have a combination of the two.

And our experience so far, in our preliminary work with SoCal Gas and Edison on this new approach to a one-stop-shop, and then on-bill repayment financing says that the balance needs to be roughly 50/50. And it's 50 percent incentives on direct install, and about 50 percent financing of the remaining improvements.

It's got to be both. And I know that there are some utility representatives who would like to argue that financing should altogether replace the incentives and subsidies. And I'm here to tell you that will not work in this sector, at least not today.

Two, one-stop-shop access is critical, that's the single point of contact. I really appreciated the San Diego model, that they pioneered, and I can tell you that SoCal Gas and SoCal Edison are able and willing, at least in our pilot projects so far, to do that and do it well. It is doable. And I'm glad the CPUC has ordered all the utilities to explore that approach.

Three, incentives should be whole building performance-based whenever possible. And I realize there may be some occasions when it's not the best approach. And this is an issue, for example, where the CPUC's-governed Energy Savings Assistance Program, and Low-Income Program, which so far is rejecting adopting this approach for various reasons we don't have time to get into.

Four, low-income incentives should be graduated based on income level. Think of it as scaled. Right now it's a binary system, you either meet 200 percent of Federal poverty, in which case you receive free services, or you don't, in which case you receive nothing free and you just have to compete for whatever other rebates and incentives are out there.

I think the point was made earlier, by Ted, in the housing world we recognize that there are whole layers of extremely low, very low, and low-income households and the needs don't just disappear, even though I realize that there are Federal agencies that also have looked at it the other way.

Next, income eligibility levels in definition should be standardized across all State low-income energy efficiency programs. It is simply crazy to have the State Community Services and Development Division running a program with one income definition and the State Public Utilities Commission running it with a different one, especially when we want to have them working together.

We’ve got to find a way to bring these together, and we have two State agencies with differing approaches.

Lastly, as was mentioned before in the San Diego model, which I really think is terrific, and Heather’s note about Jonathan Budner’s comment, owners in these buildings have to have a role at least in contractor selection and in supervising the work.

Too many stories about owners who were asked to sign documents that basically gave them no rights to supervise the work. And in the event that the work was done in a shoddy or unprofessional manner, and I’m not saying it’s done that way often, but occasionally it happens, they had no recourse.

The standard contracts in some of these programs do not give owners standard industry protections for work done on their property, and they must do that.

Okay, what tools are out there that have not yet been really fully utilized?

There is some promise from the energy performance contracting and energy service contracting where a contractor guarantees the energy savings will materialize and arranges financing.

By and large, though, these successful programs have only worked for public housing. I'm a Commissioner for the San Francisco Housing Authority. We did a $30 million ESCO and it's working well.

It's working well because the U.S. Department of Housing has guaranteed the utility savings all come to the ESCO. That is not the case with most multi-family housing.

So, ESCO's are tough to do on a smaller scale, and under a million dollar properties or portfolios.

What will work well, we believe, and we are looking forward to doing this more with the utilities, is on-bill repayment financing combined with one-stop-shop leveraging of existing utility resources.

And I'm getting the time signal, but I'm just going to quickly say the three benefits, no deed of trust is required, therefore there's no need to negotiate with senior lien holders as long as the concept of bill neutrality is observed. That is the debt service cannot exceed the savings.

Two, private capital is leveraged, stretching ratepayer and State funding.

And three, water savings can be combined with gas and electric savings.

I'll be happy to answer more questions about this pilot project, which we're underway on in Southern California and is now authorized, at least in part, by the CPUC. And again, thanks for the opportunity to make comments.

MS. EDEN: Thank you, Matt.

Next on our panel is Ali Gaylord. Ali is Project Manager at BRIDGE Housing Corporation, a nonprofit housing provider with properties throughout California representing, you know, the building owner side of things.

BRIDGE is the owner/operator of over 13,000 units of rental housing for low- and moderate-income families and senior citizens.

Ali is on the Portfolio Management Team at BRIDGE, which focuses on maintaining the high quality of BRIDGE's portfolio properties.

Ali has completed several renovations and recapitalizations of buildings by leveraging a variety of Federal, State and private funding sources.

MS. GAYLORD: Thank you. Thank you, Devi. Thank you, Commissioner and the Energy Commission for having us today.

So, I'm representing the building owners' stand point. And let me just tell you a little bit about how BRIDGE is set up. You mentioned the portfolio management division.

So, we are a long-term owner and operator of affordable multi-family buildings. Portfolio management does a 360 degree assessment of all of our properties and we look for energy improvement opportunities, as well as full recapitalizations.

So, we've accessed a lot of the energy efficiency programs, as well as full renovations of our buildings.

So, we've also got a management company that does some of our smaller energy efficiency improvements, or accesses rebates, or things like that through the utility companies.

I'm addressing questions 15 and 16 today. And I think I will start out with just echoing what some of my colleagues up here have said, that the single point of contact is very important for our utilization of these programs.

As Heather mentioned, there are over 50 programs that building owners can take advantage of.

We don't have the staff time or capacity to wade through each and every program to see what measure is applicable to our over 80 buildings that we have.

So, if we have a single point of contact that can help us apply for and cut through the red tape, and administer these funds that would be extremely helpful for us to access these, and to then pass on the energy improvements to our low-income residents.

Additionally, the whole building approach is the best way for us to look at our properties. We have energy efficiency improvements that we like to make that are property-wide, and the big improvements are major building systems.

We're talking about heating and cooling, and water heating, which are not currently measures that are allowable.

We've also got this idea of the building as a whole, as opposed to each resident's unit. For instance, insulation is an eligible measure. If you were to do insulation in every individual resident's unit, that would be a lot less efficient than going to the attic and providing attic insulation for the building, which would increase the energy efficiency of the building overall.

Another point we need to make is the ability for the owner to select our own contractor. As Heather was saying, much of the energy improvements are going along with a full building renovation. So, we can't have one contractor doing millions of dollars' worth of work and then private contractors coming in and trying to do small energy efficiency upgrades.

If we can provide our own contractor, we can ensure that it fits with our full building renovation and doesn't slow anything down.

Or, even if we were doing a smaller renovation or just the energy efficiency upgrades we can select our own contractor, make sure that we have a good relationship with that contractor, and that they're used to working in occupied, multi-family buildings.

We also have insurance requirements that we need our contractors to meet in order to be working on our buildings.

We also have some of the horror stories, like Matt mentioned earlier, where we had taken advantage of some energy efficiency upgrades in 2007. For eight properties they installed over 3,000 light fixtures. Within a year the light fixtures started failing. That contractor had gone out of business. We have no one to call, no one to talk to. We ended up having to re-

replace all of these light fixtures and that's not good for anyone.

Also, the whole building approach helps us to create consistency in the upgrades and removing the inefficiencies of going door to door.

We need to incentivize building owners to do the whole building as opposed to knocking on doors and doing one-off here or there.

That creates inefficiencies not only for the contractors who are trying to install the measures, but also for us as a long-time building owner trying to maintain. This unit over here has this certain refrigerator and maybe we don't know that that unit got theirs replaced without the building owner's knowledge.

Additionally, we need to address the buildings that have tenants that have a mix of incomes. We can't do just 50 percent of the building; we needed to do the whole building and not waste time just doing portions here and there.

I think Matt had touched on the split building incentive -- the split incentive for energy efficiencies, but I just wanted to touch on that one more time.

As a building owner of affordable housing, we are severely restricted in our ability to raise rents or to use our own reserves to pay for energy improvements.

What is generally allowable is things that make your building habitable and that must be replaced for a unit to be turned over and re-rented.

We have to ask investors' and lenders' permission before we even make those improvements. So, those lenders and investors generally think of the energy efficiency improvements as a luxury, as opposed to something that is creating value for their asset.

So, I think that that's a very important point to keep in mind.

Finally, I think we need to make sure that the incentives are enough to cover the upgrades that are needed. Multi-family building owners have heating, and hot water, cooling, big building systems that make a huge difference for energy efficiency.

These systems cost hundreds of thousands of dollars and a small rebate or a small incentive won't incentivize the building owner to make that energy upgrade without other extenuating circumstances, like that piece of equipment being near the end of its useful life.

If we want to make good and meaningful energy upgrades, we need to make sure that there's funding for it and that people have access to it.

And I think that's it, and that's my time.

MS. EDEN: I think you win, the best timing of the day. Thank you, Ali.

And finally, the last one up, for those of you who might have gotten online and seen an earlier agenda for today, Julianne Summerford was originally invited as the last speaker on this panel. She's taken ill and we wish her a speedy recovery.

And Sophia Hartkopf has agreed to step in at the last second and address the panel today.

Sophia is a project manager at Heschong Mahone Group, HMG, some of you know them, which is based out of Gold River, California, with offices around the State.

HMG specializes in residential whole building programs, primarily multi-family and affordable, and also single-family housing.

HMG's experience began over 13 years ago with implementing California's first multi-family whole building programs for new and existing buildings.

And since then they've successfully implemented a host of multi-family whole building retrofit programs for the IOUs. More recently for the ARRA-funded Energy Upgrade California Multi-Family Programs in Alameda, Sacramento, and San Diego Counties, and most recently for San Diego Gas and Electric.

Sophia has over six years of experience.

(Interruption by WebEx Operator)

MS. EDEN: Thank you. Sophia has over six years of experience in all aspects of multi-family program implementation, including program design, marketing, HERS rater training and support, design assistance, quality assurance, and market analysis.

Sophia.

MS. HARTKOPF: Great. Thank you so much for the opportunity to speak. I work with Julianne Summerford so she and I talk daily on these topics, so I'm pretty well versed on many of these topics we want to talk about today.

So, I'm going to take the program implementer and administrator perspective. We've heard a lot of other folks talk about some of the barriers that are common among multi-family building owners, other individuals that work within the sector.

I'm going to focus more from the lessons learned perspective from running these programs, but through the utilities, through ARRA, through other sources.

So, to start with I was asked to address two questions, question number 18 and question number 16. I'm going to start with question number 18.

So, we were asked to talk about what we've learned from running the San Diego program. And like Devi mentioned in my introduction, we've also been involved with the Sacramento and Alameda County programs that went through ARRA, and also a number of IOU programs that were run previous to ARRA.

So, based on those programs and primarily based on our San Diego experience there are two major points that I want to make under lessons learned.

One, we have a lot of work to do as it relates to updates to the whole house HERS II system.

And, secondly, there are a number of program lessons learned that I want to highlight today.

So, starting with the rater updates we've found, like Devi mentioned early on, these are consultant-based programs where energy raters or energy consultants provide the backbone for the program. They do the testing, they do the energy modeling, they help the property owner through the various steps, help to define the work scope with the property owner and, ultimately, do the verification and in some cases quality control for the program.

However, and this has been very, very successful and is definitely the model that we prefer for multi-family programs for many of the points that were raised earlier.

But there is still a lot of work that needs to be done in the whole house sector. And the first point we wanted to make here is that we can't stop at training and certification.

So, we developed a five-day training, along with a number of other parties, including Alameda County and others, that addressed the multi-family sector. So that the HERS II raters that went through a single-family focus training had the capacity and the skills to serve the multi-family sector.

However, we definitely cannot stop there. We've noticed a lot of issues with the raters being really prepared from a professional stand point to take on these big, complex projects, so they absolutely need the ongoing support in the form of some sort of industry organization, or some other association outside of the HERS providers to provide them with the day-to-day support to really develop into a sustainable, long-term industry.

Secondly, we need the providers themselves to develop more specific multi-family expertise. So, we worked very extensively through ARRA to develop some of that in-house capacity, but there's still work that needs to be in this area. And we really need the providers and the Commission to encourage the providers to develop specific expertise in the multi-family sector.

Like we've said previously, single-family is not the same as multi-family.

So, also, we ultimately need the CEC to adopt HERS II for multi-family. So, we weren't actually able to provide "ratings." We did use all of the protocols that were set forward with HERS II, as well as developed a very detailed set of protocols which were turned in as a deliverable, as part of ARRA.

However, ultimately for these programs to really get behind HERS II, the Commission needs to adopt HERS II for multi-family.

In terms of program updates there's a couple of points that I'd like to make here. One, we absolutely need to make sure these programs are long term and are available over a long term, and span multiple program cycles.

In affordable housing, in particular, we have very long program time frames and we need to be able to accommodate projects that take a number of years to complete, especially as we're thinking about deep retrofits.

Secondly, we really need to think about net zero and getting to net zero. If we want to meet our policy goals, we also need to align our programs to address that.

Right now it’s still somewhat difficult from a program administrative perspective, but also from the participation perspective, to get to net zero and leverage all of these various programs.

There is work being done to combine them but, ultimately, there’s still a lot of issues with competition for savings.

And one example I’d like to give about that, in particular, is that right now under the San Diego program we’re unable to promote the CSI Solar Thermal program directly because there’s different forms of funding, and that funding has various pots that we they can pull from.

So as much as we can align those pots so that you can allow some of that cross-promotion and cross-pollination, the more success we’ll have at reaching these deep energy savings.

So, we also have a long way to go from a lessons learned, from a program perspective on IAQ and combustion safety issues. So, that’s something to really -- for the AB 758 group to really focus in on.

It’s very difficult to run cost-effective programs with the current criteria that we’re being --

that we're facing for combustion safety and other IAQ issues, so we still have a lot of work to do on that front.

Also, we also need to think about the QA/QC protocols and whether we really need to do up front QA/QC on every project.

So, one of the points that Jonathan Budner made earlier today, about how the third-party HERS raters, if they prove that they are effective at doing QA/QC that we may be able to reduce the number of projects that are QA/QC'd and also allow them to do that QA/QC, something that I think we really need to explore as well for multi-family.

All right, in terms of things to replicate, we absolutely need to have up front incentives for audits. We've found that that's absolutely a big factor for getting -- especially projects that weren't already planning to do upgrades into the door.

And we've seen success at providing audits that are -- or incentives that are actually given at the back end or partially given at the front end and mostly given at the back end, so that the owner still had some buy-in on the actual audit costs, so that they're not just getting a freebie and then not moving forward with the actual retrofit.

So, secondly, I've been asked to talk about how low-income programs can be integrated into multi-family whole building programs. So, I'm going to touch a little bit on that based on our experience, as well, with the San Diego Gas & Electric program.

Nathan already talked about how that structure works, but in terms of areas where we still see the potential for improvement, specifically on combining the Energy Savings Assistance Program, Weatherization Assistance Programs, and the Energy Upgrade Whole Building Programs.

So, right now there's still some challenges with running these programs side by side. So, the way that the pilot was set up, the energy assistance or energy savings assistance program comes in first and does a walk through and determines measures that would be qualified for upgrades, both based on income and eligibility.

And one of the challenges that a lot of the folks have already brought up is that if a project is partially income qualified, they can't participate with all of the units.

So, one suggestion that we have in this area is that if there's a possibility for the building owner to contribute some of that cost for the non-income-qualified units, there may still be a way to address multiple units within a building, even if they don't all qualify as low-income.

And then, also, we see a need to really streamline the audit protocols between these programs. So, right now it's kind of like we've forced a marriage of two programs and it has worked in some respects, but in other respects it's still a cumbersome process to go through and still involves a lot of layers of participation.

So, however we can streamline those audit procedures, we would benefit from that.

And along that vein, the AB 758 program had funded some research to analyze programs or audit programs that are used for weatherization, such as Tree and REM/Rate, and how that compares to EnergyPro. That work has been put on hold, so we highly encourage the Energy Commission to pick that back up again as it is really a key area to allow for this streamlining of audit protocols so that projects don't need to go through multiple audits, and multiple policies to participate in multiple programs.

So, the other point that I wanted to -- or the last point I wanted to make is for the Tax Credit Allocation Committee, we really encourage the Commission to continue work on looking at the California Utility Allowance Calculator and how that impacts the multi-family sector, opening that up to being allowed to be used on retrofit projects. Thank you.

MS. EDEN: Thank you, Sophia. And thank you, panelists. And I think we'll hand the mic over to the Commissioner.

COMMISSIONER MC ALLISTER: Yeah, thanks. So, thanks so much, this is really, really helpful and it's great to have such a diversity of experience on the panel.

And I think this is an area I personally know probably the least about, as far as the different sectors of energy efficiency and how it actually works in the real world. And I think it's great to have your insight on that.

And definitely going forward, you know, we'd expect to keep engaging and keep being able to reach out to you to vet different ideas and, you know, keep the right questions in the air, as it were.

So, I do have a couple of questions. I guess the -- so I'm wondering what the diversity of building ownership is in the multi-family sector, and sort of how do we, as a Commission, organize this conversation to make sure that the right people are at the table so that we're covering a healthy percentage, you know, as much as possible of this marketplace.

How diverse -- you know, we mentioned REITS. We have a developer here on the panel or and owner here on the panel.

So, you know, what is the breadth of this -- what does this marketplace look like and how can we make sure that we're covering it as well as possible in the conversation that we're having about what works.

And I've kind of got a follow-up question about that -- well, maybe you can talk about it at the same time. What would that group look like? What kind of group would we get together to brainstorm about the kinds of policy initiatives we might want to adopt in this area?

MS. LARSON: Can I take a shot at that?

MS. EDEN: Sure, go ahead. And it looked Matt wanted to so, Matt, you can follow Heather.

MS. LARSON: Well, one thing I wanted -- I know a few people in the room are aware of this, but I wanted to call everybody's attention to a Multi-Family Scoping Study which was authorized under the Low-Income Proceeding to essentially characterize the multi-family market sector.

And so that's under -- and I know Tory's here today and he can probably talk a little bit more specifically about that.

But it kind of answers part of your question of, you know, exactly -- you know, what are the sub-sectors and how we'll be targeting them, specifically.

And there is some stakeholder work associated with that project in terms of, you know, bringing different groups together.

But quickly to talk about, you know, the primary sort of divisions of the multi-family property owners, you have market rate property owners, which you can sort of subdivide into either venture capital partners, REITS, or large property owners who are owners of their own large portfolios.

And then within low-income housing you can generalize that you have nonprofit housing owners, you have publicly-owned housing, so public housing, and then you have market rate housing which receives subsidies, so HUD. So, there are kind of those levels; basically three sub-sectors within market rate housing and low-income housing.

COMMISSIONER MC ALLISTER: But the discussion with each of those, I'm assuming, would be very different as to what would motivate them to make investments in their property in energy efficiency, and what kinds of tools they would need to feel comfortable with that, I guess.

MS. LARSON: Yeah, I do think so, particularly from a financing perspective. But I think partly what I mentioned earlier is that the rental housing cross-cuts a lot of those ownership types, and so there's some commonalities to rental housing and rental owners that, you know, are not necessarily unique to ownership type, although there's different considerations associated with all of those.

MR. SCHWARTZ: I think Heather covered just about all of what I was going to say. I would just add that my organization does outreach to many multi-family owners from REITS to what are referred to as mom-and-pop owners of small buildings.

And while there certainly is a diversity of financing that's involved and interest, I would say, you know, I've gotten similar responses from AIMCO, which is one of the REITS in the country, which owns a lot of properties, to smaller owners about some of the challenges in accessing some of the energy efficiency programs.

There is one other point to add, there is a California Apartment Association that could be brought to the table to represent apartment owners in a slightly more formal manner, if the Commission wanted to do that, beyond the study, which I think is a good reminder.

MS. HARTKOPF: I just want to add one thing to this. So, when we're talk about low-income here, a lot of us were talking about subsidized low-income properties, or properties that receive some form of State subsidy. But there are also a lot of very poorly managed properties in -- excuse me -- all over the State, including in Sacramento.

I was working on that program for quite a long time and I've worked with many of them through the Stimulus Project.

But they have little or no interest in making upgrades to their properties because they see no financial gain or return, unless they're planning to sell the property. And there may be the hardest sector to still tap and often left out of the picture. But they house a lot of what you would consider low- to moderate-income tenants that cannot get access to the better managed properties.

COMMISSIONER MC ALLISTER: So maybe that's a -- we're not going to solve this right now, today, but maybe that's something we can put our thinking caps on about and figure out if there's a way to access those building owners in a way that's productive. I mean I don't know.

I guess, so the follow-up question is, is there -- I was very impressed and I think a lot of us were with the Multi-Family HERCC and that was, you know, sort of the right thing at the right time.

I guess, what would your suggestions be for -- well, for sort of re-energizing or -- I think it's still constituted technically, right, but sort of getting that moving again as part of the 758 process and how might you change it, if we decided to sort of facilitate that?

MS. LARSON: Great. Well, thank you. I think the HERCC was, like you said, a great example of something that was the right thing at the right time, and there's a lot of people in the room who participated in that process.

And we have actually been discussing on the table right now, with Energy Division staff, the potential to reinvigorate that process.

It does take some resource and I think one of the key things about the success with the last iteration is that there was some ARRA funding to support the process. A lot of it is a voluntary effort, people coming together, but at the same time there were consultants who had an interest to participate because they had particular projects that had, you know, vested interest in the outcome of the HERCC process.

So, it would be good to kind of tie it to some of the programs or some of the resources that are available to get people to do things. They're more motivated if it's not entirely voluntary.

And I think that, you know, we had looked at some of the key areas for sort of convening the HERCC right now. It could be related to, one, this low-income market segment analysis that is coming out.

Additionally, some of the coordination between the local governments and IOUs, if the RENS are approved; so kind of trying to figure out how some of the IOU programs and the local government programs might work together.

And then some of that would be subdivided on a regional basis, so as has been discussed throughout the day there's the SoCal REN and the Northern California Bay Area REN which were proposed. If those move forward, then there could be some regional coordination issues with the regional utilities, as opposed to sort of on the statewide basis on some of the bigger statewide issues.

So, I think the low-income sector, the regional coordination and the statewide coordination are sort of some of the 3-K areas.

So, we are hoping to reconvene that and we, you know, would be open to suggestions of how it could integrate with AB 758 process.

MR. BARDACKE: Can I just say one thing about that last point about the poorly managed, and how we reached those?

I think we, organizationally, were a little disturbed by the -- the sort of the writing off of the mandatory or regulatory approaches to anything until phase three of AB 758 in the scoping plan.

The way you’re going to reach those folks is by telling them what to do. And they’re often, I would say, the most poorly managed and the biggest energy hogs out there.

So, in terms of bang for buck, but also invigorating the process, looking at sort of bringing in some mandatory items for the really worst buildings in phase two, rather than waiting until 2015 and beyond, which is what the scoping plan sort of stated, could be a very effective measure of engaging those people.

COMMISSIONER MC ALLISTER: Well, I wonder if there’s a middle step to basically force disclosure in some fashion. And then, you know, you’ve got some public information out there and then, you know, who knows where that could go. So, I think that’s great, thanks a lot.

MR. BARDACKE: Yeah, it was sort of said as an aside a little bit, with Heather, but to force disclosure there we've got to be able to deal with the whole building anonymous data disclosure.

New York City solved it in a year.

COMMISSIONER MC ALLISTER: Yeah, we're going to have some -- we're going to have a presentation about New York and some other places that have done disclosure tomorrow.

MR. BARDACKE: Great.

COMMISSIONER MC ALLISTER: So, the Institute for Market Transformation's going to be here, so we're all really excited to have them.

So, we're almost at five o'clock. I do have, actually, one more thing I want to get us going on because I think it's super important, and it really hasn't come up much except for somebody on the panel, and I'm sorry, I can't remember who it was, mentioned the re-lighting that had to happen in a facility.

Was that you? Yeah.

Yeah, and that brought up all sorts of issues that I'm hoping we can find some solutions to. And I've been involved in the solar side of the world for quite a long time and it was one of the things that the contractors, their struggle -- the reputable contractors, they're struggling with, is what happens when a contractor goes out of business and there's a crappy job that's going south, and who steps in to make it right?

So, there's the sort of the contractor responsibility aspect of it, or implementer responsibility if you want to be a little bit more broad.

But there's also -- and then the flip side of that are the customer protections.

So, you know, I think it's a balance, right. You want to let the marketplace do its thing, but you've also got to have some mechanisms to shore it up, some kind of insurance, some kind of -- that's important, also, for the brand of the industry.

So, I kind of want to just get that started on the record and, hopefully, people can, if they have ideas, put that in their comments. I think it's something we don't talk about enough and that contractors legitimately struggle with.

We heard this morning that the contractors are all worried about their brand. They're concerned about it, they think they can develop a good brand, they're very confident about that, and so am I, and I think a lot of us are.

But it only takes one big media story to kind of kill a lot of goodwill. So, I think we need to take that seriously. And if we want this industry to build a good brand, we've got to figure out ways that we can point to that the customer can take comfort in.

So, anyway, I'll get off my soapbox.

I guess, Dave, so I would kind of propose that if there are a bunch of cards that we give people the opportunity to come up and speak their piece. I know a couple of people have submitted multiple -- and I'm willing to stay here past 5:00, if others are, I'm not sure.

MR. ASHUCKIAN: Well, it turns out there's been very little questions for this particular panel.

COMMISSIONER MC ALLISTER: Okay.

MR. ASHUCKIAN: I think a lot of the folks have left.

What we do have, actually, one question that Sophia asked earlier was about the role of ratings in multi-family homes, or multi-family housing. And so that might be a question for this panel.

In addition we have some comments from Camille Watts-Zaga from DRA, she's the low-income person. However, she's no longer online, but we do have her questions and I could read them.

So, and then at that point we can open it up to anybody else who wants to make some final comments.

So, does anybody want to ask about what the --

MS. LARSON: I'll just respond to the role of the rating in multi-family, I mean I think we all could.

But one thing I'll mention is that with the Better Buildings Program funding there was a green labeling pilot implemented specifically for multi-family in Alameda County.

And part of the idea was they actually have to achieve a full green point rating or a lead rating certification on the project.

And there has not been a whole building rebate to help pay for the work to be done, but it has motivated property owners, multi-family market rate property owners to undertake upgrades just for the sake of getting a rating on their building.

So, I think that's something interesting. And there's, you know, the evaluation of that program that will be coming out that helps talk about sort of the value of the rating in that context.

MR. BOURIS: If I can just add one thing, we've been participating in San Diego in the Retrofit Advisory Council, and the example that I've given regularly over there has been just traveling overseas to Europe, where there's a much higher rental rate, especially in big cities, I was in Paris, opened the paper to just see real estate and even in, you know, seventh floor walkups there's an energy rating for the house.

So that if you're going to be paying a lot of money for a rental, you can actually compare apples to apples, whether it's a better neighborhood, worst neighborhood, but at least that was a factor that was regulated as far as having to make it transparent, and there was an actual score included, now, in that. And I think we can learn something from that.

MS. HARTKOPF: I guess I can answer my own question from my perspective. But one thing I will add is that I have seen a lot of interest, especially from -- less so from affordable housing, but more so from market rate property owners in getting a rating, because they want -- if they're going green, they want to tout it. And they're very interesting in being able to market that to prospective tenants, especially some of the higher-end apartments that are marketing to a young, generally green-minded type of renter.

But that being said, I think we should look towards what Heather's doing and then many of my points that I made early on about some of the changes that we still need to make and that, ultimately, in order to adopt the new HERS II that really leads to that.

Right now we have -- we do have green point rated, like Heather mentioned, that we can use as a rating for multi-family, but we don't have any other -- the HERS system is not fully adopted for multi-family, so we really need to get that adopted before we can provide meaningful ratings for the multi-family sector.

MR. ASHUCKIAN: I'll read the questions from Camille.

MR. BARDACKE: Yeah, I was going to answer one of them, sorry.

MR. ASHUCKIAN: Go ahead.

MR. BARDACKE: Because Sophia mentioned it right at the end, about the California Utility Allowance Calculator, which is an Energy Commission project, together with TECACC, and it's been actually incredible to watch two State agencies actually have the same goal and deliver, so appreciate that.

The issue right now is that it's only available for new construction. You can't go in and use the Utility Allowance Calculator to reset rents, or reset the utility allowances after a building retrofit.

And there's been some technical issues around that, there's been some financing, some regulatory, but there's also been sort of not necessarily the investment in figuring out how to make that work.

And it -- you know, in terms of where the Commission put some investment dollars in, sort of R&D, could be really helpful in terms of making suggestions to TECACC about how to reset utility allowances after the tenants experience a significant reduction in utility bills.

MR. ASHUCKIAN: Okay, let me go ahead and read the questions from Camille Watts-Zaga, again, from the Division of Ratepayer Advocates.

"Which entity in the State keeps the inventory of the Multi-Family Building Green Retrofits undertaken, specifically green retrofits partially funded through the utility ratepayer, municipal, ARRA, other public funds?"

"Would you agree that this inventory is the first step in amassing the performance data metrics that we are after to demonstrate the value proposition?"

The last question; "The CEC scoping report states that affordable multi-family owners may have an avenue to overcome the split incentive through California Utility Allowance Calculator. Can you explain this?"

MS. EDEN: Do we have any volunteers?

MS. LARSON: Yeah, I guess, you know, on the first one in terms of who's keeping an inventory of the projects, I think somebody mentioned earlier that, you know, there's various programs throughout the State, be it multi-family or otherwise, that have data. And there's not sort of this systematic way that the data has been collected across programs and whatnot.

And that's something that there isn't one centralized place. And given the number of multi-family programs, there probably isn't one centralized place.

There was an ARRA-funded project, it's called a Multi-Family Tracking System, which kind of looked across various programs, including the National Home performance XML protocol to try and standardize the kind of data that's collected across programs.

And eventually, if more and more programs use either this tracking system or one that has similar data output that we could start to amass more data, you know, across these buildings.

So, that's something that was ARRA-funded and we do hope that that tracking system will be continued to use or something that's consistent with it.

MR. ASHUCKIAN: And the second question, Ted started really answering that, which is if the QUAC could be used more readily in retrofit situations then it might be able to provide a means for the owner to recoup some of the savings, but I think there's still quite a ways to go before we can get there and we need other tools in the meantime.

MR. BARDACKE: Yeah, I didn't mean to suggest that that's going to be the one thing, it's -- first of all, it would only be applicable to 600,000 of the 4. whatever million multi-family. So, you know, it's a decent sub-sector but it shouldn't sort of replace the on-bill repayment idea with no net -- you know, guaranteed no net increase, which probably provides more protection to tenants than a change in the utility allowance.

Because you mentioned, you know, the one bad story can create a lot of bad will, the first story that says all this innovation led to a poor person's rent plus utility bills going up, we're -- we're back to -- we're behind square one again.

MR. ASHUCKIAN: We have a question from Jonathan Budner.

MR. BUDNER: So, I wanted to understand, Matt, you said that it's important to have 50 percent subsidy in the form of cash incentives and 50 percent in the form of loans, subsidized loans.

Is it important to half that being loans? Why is it -- or did I misunderstand your response? What is wrong with, say, a hundred percent subsidy in the form of cash or a direct install type approach?

MR. SCHWARTZ: I'm glad you asked the question because I didn't mean to leave the impression that owners would be displeased in taking a hundred percent cash incentive.

MR. BUDNER: I wouldn't think so, but I wanted to ask the question.

(Laughter)

MR. SCHWARTZ: No, I was just talking about the maximum ability right now to leverage the owner-metered savings through a product like on-bill repayment. That we can't get to the full cost of a retrofit that way, that there's still a gap, and that the utilities should not draw the conclusion that even if on-bill repayment is fully adopted that, therefore, they can pull back on the incentives and direct install. There needs to be a marriage.

And the 50 percent is just a rough ratio based on the first property we're looking at. There will be a variation, maybe 25 to 75 percent. But somewhere in the middle is where we think the ratio will generally be.

MR. BUDNER: And I also wanted to ask a question, if I may, kind of out of ignorance, because

I'm more familiar with the commercial retrofit market. But for even subsidized housing, you still have central expenses for central boilers, central plants, et cetera, lighting, that is not shared or not on the individual renter's bill.

And that cost is your cost to operate, so if you lower your cost to operate at the CAP rate -- in the commercial context, your asset value increases because the cost to operate that same building is lower.

Does that also apply in an affordable -- or a rental situation, where the costs are more -- similar type of tenant/owner split?

MR. SCHWARTZ: Technically, you'd be right, except that in the rent-restricted buildings that we're talking about, I think Ted referenced the number 600,000 units, so it's not the whole stock.

But there's almost someone else with a right to cash flow, if there is any cash flow. So, even in the event that the owner's savings was more than enough to pay for whatever portion of the retrofit was financed, generally speaking there's not going to be a lot left by the time -- I mean, for example, the State of California Housing Department gets a share of any surplus cash. Local governments get a share of surplus cash.

MR. BUDNER: Okay.

MR. SCHWARTZ: So there's not -- there's just not much left. There's not a big incentive for surplus cash in most cases.

MR. BUDNER: But you mentioned, I can't remember if you were Alicia saying that you need additional equity as part of this transaction. That seems to be a source of equity if it could be capitalized in some way, and if you could fend off the local governments, and the cities, and the other entities that need their share when that asset value increases.

So, where does that money -- how could that money be kept in the project as an increase in equity, what's the mechanism, outside of the 800,000 units that fall into that category.

MR. SCHWARTZ: Yeah, I think, Heather, you made the equity comment, I'm trying to remember. But, you know, it's not -- you can't actually use low-income housing tax credit equity in conjunction with any of the free services because it directly comes out of the tax basis.

So, we can't -- I'm not sure that -- that type of equity is really not on the table for these in between retrofits.

MS. LARSON: Maybe Ali can give that.

MS. GAYLORD: You know, and I was actually just going to say I can't think of any way that we could capture the equity. But actually just in practice, when we as a building owner are able to keep our operating expenses the same or lower them, we -- what we do as a non-profit-mission-driven houser is we keep the rent increase for that year low.

So, the benefit is going back to the resident, but there's no way for us to then finance out the cost of the improvements.

MR. BARDACKE: And I would just say that for the non-600, you know, the other 75 percent, who are more in a -- act more like commercial building owners, I think the big issue that's facing is that if you do like a direct install of lighting in a parking lot, or something like that, you've only kicked the can down the road of the deep energy retrofit because there's no way of blending savings.

So, it might be good for that, you now, the operating expenses of that building right then and there.

But we're not going to get to the more ambitious goals because you've taken all the low-hanging fruit and now all that's left is, you know, 15-year payback.

And that's why I think Matt was talking about, you know, or many people were talking about that the whole building approach needs to be -- needs to be looked at if we're going to sort of reach the deeper savings goals.

MR. BUDNER: I would just say that I agree, the problem with sort of the layer cake approach to multi-program intervention in the same project is sort of low-income comes in and does kind of their cherry-picking of lighting stuff, and cheap stuff that they do. Not cheap quality, inexpensive.

And then kind of the multi-family rebate programs also do kind of the next level of cherry-picking, the lighting and the stuff that didn't get picked up in the low-income.

So, what's left for EUC multi-family is the expensive, deep energy, central plant stuff.

MR. BARDACKE: Yeah.

MR. BUDNER: And I can't remember, I think it was Heather who mentioned sort of the allocation of savings among those programs is such that the low-income program gets the lowest cost measure, highest return on investment, and looks the best from a cost effectiveness stand point, relatively speaking, they're all not great. Multi-family comes next and then a EUC, at least the way we're sketching this out, looks like it pays the most money for the most expensive stuff.

MR. BARDACKE: Yeah. No, I absolutely agree and that's why this whole building approach really, with layering programs, is so important.

MR. BUDNER: Right. Correct.

MS. LARSON: Yeah, I'd make the --

MS. HARTKOPF: And I would also -- go ahead.

MS. LARSON: Oh, I did make the savings attribution thing. But I just wanted to kind of follow up on the equity issue. I think that part -- I made part of that comment and I was speaking a little bit more specifically about market rate multi-family owners, who are not interested to take on an extra loan if they don't have some kind of equity invested.

And parts of that came from the PG&E innovator pilot project that the cities of Oakland and Emeryville have. They had some multi-family market rate stakeholder meetings where, you know, they tried to kind of investigate what were some of the key mechanisms, like it was PACE, or other types of financing attractive.

And, you know, owners were kind of -- market rate owners were saying, you know, we don't really want to take on another loan if we don't have something up front to help, you know, build equity that we could use against that loan.

MR. BUDNER: Okay.

MS. HARTKOPF: And on a similar note I mean you -- there are other limitations, too, so not every building is going to have a central plant to go after, so there's that issue.

And then, also, from a financing perspective, if you're looking at the market rate sector a lot of those building owners don't hold onto a property long enough to make an investment for the long term.

And so they're maybe only interested in doing these kind of upgrades unless there's a significant subsidy at time of purchase, if they're requiring and doing a massive rehab, or before they sell.

MR. BUDNER: Right. I should also mention, maybe, we haven't talked about centrally-metered facilities. Mostly, by implication, we've been talking about individually metered units. Some of this stuff is a lot easier when you have a central meter and that you eliminate, essentially, part of the landlord and tenant problem. At least you have all the central costs and a central body responsible for those costs, and responsible for those investments.

MR. SCHWARTZ: I think that's definitely true. But I remember seeing a statistic, I don't remember from which report, which rings true to me, that less than three percent of the multi-family stock is fully centrally metered and it tends to be single-room occupancy buildings, or senior buildings, big buildings in more dense areas.

MR. BUDNER: Right, but that's a start.

MS. HARTKOPF: And it still doesn't solve the issue, though, with what you're bringing up, which is even if there's a payback you can't access the capital because your investors won't let you.

MR. BUDNER: If you're affordable, if you're subsidized, yeah.

MS. HARTKOPF: Right. Right.

MR. ASHUCKIAN: We have one more comment from George Nesbitt, from CalHERS.

MR. NESBITT: Thank you. I've been doing HERS I verifications on multi-family since about 2002. In 2003 I did about six small multi-family retrofits under Savings by Design, with Heather, for a small, slim word. You laugh, it's true.

MS. LARSON: No, I met George Nesbit in the attic of a small building in the middle of Oakland.

MR. NESBITT: Working for a slum lord.

(Laughter)

MR. NESBITT: Now a slum lord. Last year I did HERS II ratings on 29 buildings and 324 units, required by the California Tax Credit Allocation Committee, required for multi-family rehab.

I also did seven of the 54 Banff audits for a dysfunctional team.

And I am currently working on what will hopefully be the first new multi-family net zero energy project in California.

(Off-record comment)

MR. NESBITT: Okay, we'll be second, but it's okay. The top three.

MS. EDEN: Maybe you can define it differently so you'll --

MR. NESBITT: So, yeah, exactly, in Monterey County or San Luis Obispo County.

But on the HERS II, so if you read -- if you go to page 5 of "What's your Energy IQ?" the Energy Commission's HERS rating system disclosure document it says, "The Energy Commission created the HERS rating system for all new, existing, single-family and multi-family residences three stories and less, low-rise.

Granted, we don't have HERS for high-rise, although that's probably going to fall into the commercial rating system.

So, I think there are an awful lot of those small landlords and I think those projects can go under the more contractor-driven type program and/or have a choice.

The larger, the larger institutional clients, the larger buildings, definitely the consulting model I think works a lot better.

You would think, though, that on these large projects that things would be easier. So, on my net zero project there's an engineer and, you know, for all the promises to get money, you know, we're doing Energy Star, and NAHV Green, and Enterprise, and you name it and, of course, you're required to Manual J and Manual D.

Well, the engineer does not know what that is. When I did the Manual J, he didn't believe the loads could be so low. But it gets to 105 in Paso Robles.

He said he didn't need my room-by-room loads to do his duct design, so he just did an arbitrary duct design and I have now proved it doesn't work. I've done the actual Manual D to show why it doesn't work, why it's totally off and I'm going to have to redo -- basically redo all the duct designs and tell the engineer what he needs to sign off on.

So, you know, the problem I think we face, whether it's single-family, multi-family is we have to retrain the whole industry. Until every job is done right and had good decisions made, our work is not done.

The good news is this is job security.

COMMISSIONER MC ALLISTER: Thanks George. I think -- any last comments from the panel there on that? I think we're trying to wrap up, I see a lot of people shifting around in their seats.

MS. HARTKOPF: Just really quickly I want to address two of George's comments. So, one, I agree there are -- there is a place for the contractor model within multi-family and don't misunderstand if we say this is consultant model.

I've seen it work successfully, especially in Sacramento. We had at least one contractor bring a lot of projects to the Energy Upgrade Program and it worked really well. He partnered with a rater and that was good.

That being said, I also wanted to add your comment about the HERS II for multi-family, there definitely are a lot of the protocols already worked out, and the procedures have been set in place, and there have been a lot of updates that have been made in the energy software, but it's the actual rating piece that's not yet solved for multi-family. And actually getting a rating that you can put in the registry and everything else -- or download from the registry, that's still an area we need to work on. So, that's it.

MS. EDEN: Okay, well, I want to thank our panelists. We lost one to the time, but thank you very much.

(Applause)

MR. ASHUCKIAN: I just want to thank everybody for coming today. It was a very informative day, lots of questions.

And again, I want to encourage folks who didn't have a chance to get their questions on the record to submit written questions.

We're also starting again tomorrow morning, bright and early again, nine o'clock, starting with the presentation on our overall market program and goals.

COMMISSIONER MC ALLISTER: Yeah, thanks everybody for coming. And another great day tomorrow and I hope many of you can join us then, too.

So, thanks again to all our panelists today and everybody for being here, both on the web and here in the room with us. So, thanks very much.

MS. EDEN: Thank you.

(Thereupon, the Workshop was adjourned at 5:21 p.m.)

--oOo--